Mindful Parenting and Child Internalizing Problems: Assessment, Relationships and Treatment

Virginia Louise Burgdorf

L.L.B, B. Psych (Hons)

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Clinical Psychology and Doctor of Philosophy

School of Psychology

Faculty of Science

The University of Sydney

2022

Statement of Originality

I certify that this thesis has not been submitted for any degree or purpose, other than in partial fulfilment of the requirements for the degree of Master of Clinical Psychology and Doctor of Philosophy at The University of Sydney. To the best of my knowledge and other than as expressly stated in this thesis, the intellectual content of this thesis is the product of my own work. The assistance received in preparing this thesis and the published studies included in this thesis has been acknowledged.

_____ Date: 3 December 2021

Virginia Burgdorf

Acknowledgments

I express my sincere gratitude to every parent who participated in the studies for this thesis. As any parent knows, the day is never long enough to get everything done. Still, somehow, you found the time to participate in these studies and I thank you for doing so. I hope that the time and effort you invested reaps benefits for your own families and for others to come.

To my supervisor Dr Marianna Szabó, thank you for guiding me down the path of mindfulness and for patiently spending so many hours co-facilitating the mindful parenting program and reading draft papers. You went above and beyond the call of duty, for which I am grateful. Your guidance has certainly contributed to this thesis, but it has also been enormously helpful to me personally and professionally.

To my supervisor Associate Professor Maree Abbott, thank you for your encouragement, practicality, and aura of calm. I have felt overwhelmed at various points throughout the journey of producing this thesis but have always felt back on track and capable of the task ahead after speaking with you.

I am so appreciative of the financial support I received from an Australian Postgraduate Award scholarship and the moral support from colleagues and staff in the Clinical Psychology Unit at The University of Sydney.

Last but not least, to my family. Geoff, I cannot thank you enough for your unwavering, patient support over the years that it has taken me to complete this thesis. I could not have done it without you. Sophia and Arlo, you have been a driving force for me since you were born. I admire and learn from your humour, feistiness, bravery, and kindness every day and I am a better person because of you both. Nutmeg, my unconditionally adoring research assistant, your gentle snore has kept me company throughout this whole project. Finally, thank you to my parents for ingraining in me such an appreciation for science.

Author Attribution Statements

The work for this thesis was done primarily by the Candidate, under the supervision of Dr Szabó and Associate Professor Abbott. Chapters 1 to 5 of this thesis reproduce, with some amendments, both unpublished and published manuscripts prepared by the Candidate in working towards this thesis. The manuscript reference, outline of amendments made and authorship contributions for each of Chapters 1 to 5 are described below.

Chapter 1

Burgdorf, V. (2019). *Mindful parenting: Relationships to parenting variables and parent and youth mental health.* [Unpublished manuscript]. School of Psychology, The University of Sydney.

Chapter 1 reproduces part of the text of the unpublished paper referred to above, which the Candidate was required to submit to The University of Sydney as part of the Master of Clinical Psychology and Doctor of Philosophy degree program, in the form of a draft literature review for this thesis. Chapter 1 expands upon the unpublished paper to ensure that the thesis forms a cohesive whole, as required by the University's procedures relating to higher degrees by research.

Authorship: The Candidate searched and reviewed the relevant literature, developed the aims of the thesis based upon that review, and wrote and revised each draft of the unpublished manuscript.

Chapter 2

Burgdorf, V., Szabó, M., & Abbott, M. J. (2019). The effect of mindfulness interventions for parents on parenting stress and youth psychological outcomes: A systematic review and meta-analysis. *Frontiers in Psychology*, *10:1336*. doi: 10.3389/fpsyg.2019.01336

Chapter 2 of this thesis reproduces the text from the published article referred to above (Appendix A1). Minor amendments have been made to the published version to ensure that the format of Chapter 2 is consistent with the layout of this thesis.

Authorship: The Candidate designed and conducted each step of the review and meta-analysis, including searching and reviewing literature, extracting and analysing data and writing each draft of the manuscript. The Candidate was assisted by Avalon Tissue, a Master of Clinical Psychology student, who independently reviewed a portion of the studies to be included and the risk of bias of included studies. M. Szabó and M. Abbott reviewed the design and collaborated on editing the manuscript.

Chapter 3

Burgdorf, V., & Szabó, M. (2021). The Interpersonal Mindfulness in Parenting Scale in mothers of children and infants: Factor structure and associations with child internalizing problems. *Frontiers in Psychology, 11:633709*. doi: 10.3389/fpsyg.2020.633709

Chapter 3 of this thesis reproduces part of the text from the published article referred to above (Appendix B1). The published article contains material on two aspects of the Interpersonal Mindfulness in Parenting Scale (IMP): its factor structure and its relationship to child internalizing problems. Chapter 3 reproduces the parts of the published article that relate to the factor structure of the IMP but omits the other parts. To maintain the continuity and meaning of the text in Chapter 3 after the omission, and to ensure that its format is consistent with the layout of this thesis, minor amendments have been made to the retained aspects of the published article.

Authorship: The Candidate designed the study, obtained ethical approval, recruited participants, collected and analysed the data, interpreted the results and wrote and revised

each draft of the manuscript. M. Szabó reviewed and revised the design and statistical analyses and reviewed and critiqued each version of the manuscript.

Chapter 4

Burgdorf, V., & Szabó, M. (2021). The Interpersonal Mindfulness in Parenting Scale in mothers of children and infants: Factor structure and associations with child internalizing problems. *Frontiers in Psychology, 11:633709*. doi: 10.3389/fpsyg.2020.633709

Chapter 4 of this thesis reproduces part of the text from the published article referred to above (Appendix B1). The published article contains material on two aspects of the Interpersonal Mindfulness in Parenting Scale (IMP): its factor structure and its relationship to child internalizing problems. Chapter 4 reproduces parts of the published article that relate to the associations between the IMP and child internalizing problems. As these aspects of the published article constituted only a minor part of the overall article, Chapter 4 substantially expands upon them to ensure that the thesis forms a cohesive whole, as required by the University's procedures relating to higher degrees by research.

Authorship: The Candidate designed the study, obtained ethical approval, recruited participants, collected and analysed the data, interpreted the results and wrote and revised each draft of the manuscript. M. Szabó reviewed and revised the design and statistical analyses and reviewed and critiqued each version of the manuscript.

Chapter 5

Burgdorf, V., Abbott, M. J., & Szabó, M. (2022). A mindful parenting program for parents concerned about child internalizing problems: A randomised controlled feasibility study. *Mindfulness, 13*, 430-448.

Chapter 5 of this thesis reproduces the text from the published article referred to above (Appendix D1). Minor amendments have been made to the published version to ensure that the format of Chapter 5 is consistent with the layout of this thesis.

Authorship: The Candidate designed the study, obtained ethical approval, recruited and screened participants, co-facilitated the program, collected and analysed data, interpreted results, and wrote and revised the manuscript. The Candidate was assisted by Julia White, a Master of Clinical Psychology and Doctor of Philosophy student, who provided an independent review of the qualitative data collected in the study. M. Abbott reviewed the statistical analyses and each draft of the manuscript. M. Szabó reviewed and revised the study design, supervised the recruitment of participants, co-facilitated the program, and reviewed the statistical analyses and each draft of the manuscript.

Supervisor statement

As supervisor for the candidature upon which this thesis is based, I can confirm that the authorship attribution statements above are correct.

_____ 3 December 2021

Assoc. Prof. Maree Abbott

Abstract

Parenting stress and child mental health are interwoven, such that reducing parenting stress may be advantageous for more fully addressing child symptoms. This thesis sought to build on our knowledge of the impact of mindful parenting programs (MPPs) on parents and children by evaluating whether MPPs reduce parenting stress for parents of children with primary internalizing problems and exploring whether and how MPPs might reduce those internalizing problems. The meta-analysis (Chapter 2) found that MPPs may reduce parenting stress and improve child outcomes, but that reductions in parenting stress did not predict improvements in child internalizing problems. Confirmatory factor analyses (Chapter 3) showed the 6-facet model of mindful parenting identified by de Bruin et al. (2014) to be a good fit in English-language mothers of children and infants. Regression analyses (Chapter 4) with mothers of children and infants showed that mindful parenting uniquely predicted child internalizing problems, parental experiential avoidance, cognitive emotion regulation and parent beliefs and behaviors relating to child anxiety. The Non-judgmental Acceptance of Parental Functioning facet was a key outcome predictor, especially for mothers of children. A randomized, waitlist-controlled feasibility study (Chapter 5) found that an 8-week MPP was well-attended and acceptable to community-recruited parents with concerns about their child's internalizing problems. Effects favoured the intervention group, with moderate to large improvements in school-aged child internalizing symptoms, parenting stress, parent experiential avoidance, cognitive emotion regulation and unhelpful beliefs regarding child anxiety. Coping in specific, stressful parenting situations also improved. Qualitative feedback identified increased acceptance, self-compassion and empathy as helping parents cope with child internalizing problems. This thesis shows that MPPs are likely to reduce parenting stress and child internalizing, for families of children with primary internalizing concerns. Reductions in child internalizing problems could be explained by improved parent emotion

regulation and less unhelpful beliefs regarding child anxiety. These preliminary findings could be further explored experimentally and through longitudinal path analysis.

Table of Contents

List of Tables and Figures

Chapter 2

Chapter 3

Chapter 4

Chapter 5

CHAPTER ONE. Literature review

Mindful parenting and its relationship to parenting stress and child mental health

Chapter 1 contains a review of the literature relating to mindful parenting, particularly in connection with parenting stress and child psychological outcomes. The research is summarized, and areas for further research are identified.

This Chapter reproduces part of the text of the unpublished paper referred to below, which the Candidate was required to submit to The University of Sydney as part of the Master of Clinical Psychology and Doctor of Philosophy degree program, in the form of a draft literature review for this thesis. Chapter 1 expands upon the unpublished paper to ensure that the thesis forms a cohesive whole, as required by the University's procedures relating to higher degrees by research.

Burgdorf, V. (2019). *Mindful parenting: Relationships to parenting variables and parent and youth mental health.* [Unpublished manuscript]. School of Psychology, The University of Sydney.

Abstract

Most parents will feel stressed in their parenting role at times, but the risk of experiencing this stress is undoubtedly greater for parents of children with psychological difficulties (Vaughan et al., 2012). For some of these families, the stress experienced by parents may lead to poorer parenting (Venta et al., 2016), which in turn worsens child problems (Pinquart, 2017). For others, the stress will compromise parent efforts to seek or engage with the treatment of their child's difficulties (Maliken & Katz, 2013). Accordingly, managing parenting stress is important. One characteristic that has been suggested as offering some protection to both parents and children against the effects of parenting stress is parental mindfulness (Campbell et al., 2017). An increasing number of intervention studies have offered mindful parenting programs for parents, particularly to those struggling to manage child psychopathology, with the intention of building the mindfulness they bring to their parenting and decreasing the level of stress they experience. This literature review will summarize the existing research on mindful parenting, including regarding the theoretical construct of mindful parenting and how it is measured, and the outcomes of mindful parenting programs for parents and their children. Based on that review, areas for future research will be identified and addressed within this thesis.

Parenting stress

Parenting can involve great love and joy, but is also challenging, and even stressful at times. The experience of parenting stress occurs when a parent perceives that the demands of parenting outweigh their capacity to meet those demands (Östberg et al., 2007). Parents with higher levels of parenting stress experience worse psychological well-being (Lavee et al., 1996) and marital quality (Robinson & Neece, 2015). Higher parenting stress is also related to over-reactive and hostile parenting behavior (McMahon & Meins, 2012; Venta et al., 2016), which contributes to poorer child outcomes (Pinquart, 2017). Children of stressed parents experience more anxiety and depression (Rodriguez, 2011), more behavioral problems (Davis & Carter, 2008) and poorer executive function (de Cock et al., 2017) and social competence (Anthony et al., 2005).

Various child- and parent-related factors contribute to parenting stress (Abidin, 1992). Child-related stressors include sleeping and feeding problems (Östberg et al., 2007), poor emotional health (Vaughan et al., 2012) and behavior problems (Baker et al., 2003), while parent-related stressors include poor emotional health and low self-efficacy regarding parenting (Deater-Deckard, 2004), and the tendency to hold negative perceptions or make negative evaluations regarding the child (Costa et al., 2017; Costa et al., 2006). Further, consistent with the generally transactional nature of parent-child relationships (Sameroff & Mackenzie, 2003), child and parent factors also tend to interact (Deater-Deckard, 2004). For example, child behavioral problems may contribute to more negative perceptions of the child and more negative parenting behaviors, which in turn contribute to further behavior problems and more parenting stress (Deater-Deckard et al., 2005).

As child mental health contributes to parenting stress directly and through parent perceptions regarding the child, parents of children with mental health problems are particularly vulnerable to parenting stress (Vaughan et al., 2012). Effectively treating child

psychopathology is therefore likely to reduce the level of parenting stress associated with it. However, although treatments such as cognitive behavioral therapy and parent behavior training are generally efficacious for child mental health problems (James et al., 2013; Mingebach et al., 2018), these treatments are less successful for children when their parents are stressed (Compton et al., 2014; Reyno & McGrath, 2006). Stress hinders emotion regulation skills (Crandall et al., 2015; Raio et al., 2013), making it harder for parents to model appropriate behavior for their child. Stress also impacts parents' ability to engage in their child's treatment, acquire new skills in therapy and implement these at home (Maliken & Katz, 2013). As well as hindering treatment of child psychopathology, longitudinal evidence suggests that parenting stress could also contribute to later child psychopathology (Stone et al., 2016). For some families, addressing parenting stress may therefore be a necessary step towards improving child well-being.

Since holding negative beliefs or making negative judgments regarding a child is a source of parenting stress (Costa et al., 2006; Deater-Deckard et al., 2005; Fernandes et al., 2020), parents who are less judgmental, for example, those who engage in less critical parenting toward their child, tend to experience lower levels of stress in their parenting role. An individual's tendency to be non-judgmental regarding their present experience is a central aspect of mindfulness (Baer et al., 2006). Parental mindfulness is therefore one factor that may lessen a parent's susceptibility to parenting stress and/or increase the likelihood of their managing stressors in a more adaptive manner (Campbell et al., 2017).

What is mindfulness?

In Western psychology, mindfulness has been defined as having two key components: awareness of the present moment through regulation of attentional focus, and an accepting or non-judgmental orientation towards present experience (Bishop et al., 2004). The term mindfulness is also used to refer to the process of attaining this aware and accepting state

(Dumas, 2005). For example, Kabat-Zinn (2015) describes awareness as arising from the application of mindfulness, or the paying of attention to whatever experiences are occurring, in an open, non-judgmental and non-reactive manner. As the capacity for attention and awareness is universally human, the inherent tendency to be mindful can be understood as a character trait which exists independently of any cultural tradition or training (Brown & Ryan, 2003; Kabat-Zinn, 2003). An individual's ability to remain aware of the present moment and in contact with their experience in that moment is thought to lessen automatic reactivity and thus allow for *conscious* responding to the experience (Brown et al., 2007).

For measurement purposes, the construct of mindfulness has been broken into five facets (Baer et al., 2006), each representing a skill involved in its practice: (1) Non-reactivity to Inner Experience involves perceiving inner experiences such as thoughts and emotions, without becoming overly attached to or caught up in those experiences; (2) Observing involves attending to or noticing internal and external stimuli; (3) Acting with Awareness refers to the ability to act consciously, rather than automatically, in the present moment; (4) Describing involves the ability to use language to describe experiences; finally, (5) Non-judgment of Inner Experience is the ability to accept thoughts and emotions as they are, without labelling or evaluating them (Baer et al., 2006). These mindfulness skills can be developed through meditation practice (Kiken et al., 2015). In a typical practice, the individual directs their attention to an internal or external target, such as their breath or a sound, and observes their experience of the target. Any wandering of attention from the target, or reaction to the experience, is non-judgmentally noted, and the individual's attention is continually returned to the target (Baer, 2003).

The practice of mindfulness has long been recognised within Eastern cultures as a way for the individual to develop a state of calmness and insight (Shonin et al., 2015). In the West, the benefits have been empirically documented over the last forty years, as

mindfulness-based therapies have been utilised to manage psychological difficulties including stress (Brown et al., 2007). Therapeutic programs like Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn et al., 1992) and Mindfulness-based Cognitive Therapy (MBCT; Segal et al., 2013) have been found to reduce stress, anxiety and depression, and improve psychological well-being, in non-clinical and clinical populations (Hofmann et al., 2010; Khoury et al., 2015). The positive effects of mindfulness training are thought to be achieved through improvements in emotion regulation abilities (Curtiss et al., 2017; Wheeler et al., 2017).

Mindfulness in parenting

Researchers and clinicians have extended their interest in the processes and benefits of intrapersonal or general mindfulness, to mindfulness in the context of social relationships, including parent-child interactions. Mindfulness in parenting was explored first by Jon and Myla Kabat-Zinn (1997). The Kabat-Zinns described mindful parenting as the ongoing practice of directing non-judgmental, non-reactive attention to the child, so as to be more present with the child, more aware of their needs, more accepting of the child's attributes, however "difficult" they may be, and more compassionately responsive to them (Kabat-Zinn & Kabat-Zinn, 1997, 2021). Dumas (2005) contrasted this mindful style of parenting with automatic parenting, in which parents react rather than respond to child behavior. Automatic parenting develops when a parent and child routinely relate to each other with particular beliefs, feelings and behaviors, such that the parent's responses become over-learned or habitual, instead of being deliberate, goal-oriented behaviors (Dumas, 2005). While automatic parenting is not inherently bad, it is problematic when parents and children routinely engage negatively with one another, to the point where negative interactions become the default interactions.

Building on the five-facet model of general mindfulness (Baer et al., 2006), and on the accounts of mindfulness in parenting by the Kabat-Zinns (Kabat-Zinn & Kabat-Zinn, 1997) and Dumas (2005), Duncan and colleagues (2007, 2009) developed a model of mindful parenting to show how mindfulness could be understood and applied to relationships between parents and children. The model comprises five dimensions believed to be important to the quality of parenting: (1) Listening with Full Attention relates to parents' focused attentiveness to their child's words and non-verbal cues and the awareness that comes from that attentiveness; (2) Non-judgmental Acceptance of Self and Child involves an acceptance by the parent of their own and their child's traits and behaviors, given the awareness of self and child that arises from focused attentiveness. In other words, acceptance is about truly recognising what is happening in a given situation and does not mean that a parent should accept all child behaviors; (3) Emotional Awareness of Self and Child concerns parents' ability to recognise and understand their own and their child's emotions and how emotions affect parenting behaviors; (4) Self-regulation in Parenting describes parents' ability to respond consciously to their child rather than reacting automatically to child behavior; and (5) Compassion for Self and Child refers to parents' desire to care for and comfort their child, and their propensity to show kindness towards themselves as parents (Duncan, 2007; Duncan et al., 2009).

It is argued that parents who embody more of the five hypothesized dimensions of mindful parenting (Duncan et al., 2009) will be more attuned to their child, better able to understand their child's needs, and to understand and interpret their present parenting experiences within the broader landscape of their relationship with their child (Dumas, 2005; Duncan et al., 2009). This may assist them to regulate their parenting behaviors, including disengaging from habitual and potentially unhelpful ways of evaluating their child or interacting with them. Instead, more mindful parents will be more able to consciously choose

behaviors that facilitate their longer-term parenting goals and a healthier parent-child relationship (Dumas, 2005; Duncan et al., 2009). Duncan and colleagues note that both parents and children will benefit when parents are more mindful in their parenting, given the transactional nature of parent-child relationships (Duncan et al., 2009; Sameroff & Mackenzie, 2003).

Relationships between mindful parenting, parenting stress and child mental health

Based on evidence of improved attentional processes following general mindfulness training, it has been hypothesized that the greater capacity of more mindful parents for present-moment attentiveness means they will be less likely to experience automatic stress responses to their child in challenging parenting situations (Bögels et al., 2010). It is further proposed that parents who are less stressed will engage in better quality parenting, contributing to improved mental health outcomes for children (Bögels et al., 2010; Parent et al., 2016). Correlational studies support these hypotheses. More mindful parents in both Western and Asian populations consistently report experiencing lower levels of parenting stress, whether recruited in community (Corthorn & Milicic, 2016; Moreira & Canavarro, 2018) or clinical contexts (Beer et al., 2013; Cheung et al., 2019). Mindful parenting is also positively related to indicators of better-quality parenting, including the emotional quality of the parent-child relationship (Moreira et al., 2020; Potharst et al., 2020; Zhang et al., 2019), more positive parenting behaviors (Dieleman et al., 2020; McKee et al., 2018) and less negative parenting behaviors (Parent et al., 2016).

More mindful parenting has also been consistently linked with better child and adolescent mental health, including greater well-being (Medeiros et al., 2016), better emotion regulation (Moreira & Canavarro, 2020; Zhang et al., 2019), less internalizing and externalizing problems (Beer et al., 2013; Geurtzen et al., 2015), and more prosocial behavior (Wong et al., 2019). Further, mindful parenting may be more closely related to child well-

being than other known parental risk factors for child mental health problems, since it has predicted child well-being after accounting for parent mental health and other parenting variables associated with child well-being, such as parental responsivity, control and autonomy granting (Geurtzen et al., 2015; Medeiros et al., 2016).

Measuring mindful parenting

Few tools for measuring mindful parenting are available to researchers. The Bangor Mindful Parenting Scale (BMPS; Jones et al., 2014) is a 15-item mindful parenting measure for use with parents of children with a developmental disability, based on the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). No studies have been published regarding its factor structure, but it is strongly correlated with the FFMQ (Jones et al., 2014). The BMPS has been used to measure mindful parenting in two intervention studies with parents of children with developmental disabilities (Jones et al., 2018; McGregor et al., 2020). In contrast, the 28-item Mindfulness in Parenting Questionnaire (MIPQ; McCaffrey et al., 2017) was developed with a community sample of parents of 2-16 year-old children (N = 203). It has 2 dimensions: (1) Mindful discipline, which contains items regarding parents' emotional awareness, non-reactivity and goal-focus in parenting; and (2) Being in the moment with the child, which covers parents' child-focused attention, and understanding and acceptance of their child (McCaffrey et al.). No intervention studies utilizing the MIPQ were found.

The principal tool used to measure mindful parenting in the research literature is the Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007; Duncan et al., 2009). The IMP was first developed as a 10-item scale, in a large sample of parents (N = 1276) of adolescent children (M = 12.95 years). Confirmatory factor analysis indicated a higher-order factor of mindful parenting, measured by eight of the original 10 items, with four facets: (1) Present-centred Attention; (2) Present-centred Emotional Awareness; (3) Non-judgmental

Acceptance; and (4) Non-reactivity. The internal consistency of the scale was adequate (α = 0.72), but lower (α = 0.45 to 0.66) for the 2-item sub-scales (Duncan, 2007). The IMP was then expanded to 31 items, intended to measure the 5 dimensions hypothesized by Duncan and colleagues in their development of a theoretical model of mindful parenting (Duncan et al., 2009). However, it is not known whether this expanded IMP measures the five proposed dimensions, as there are no published studies confirming the validity of this structure in an English-language population.

Validation studies conducted in non-English speaking populations have not supported the IMP's hypothesized five-factor structure. A Dutch version was tested in a large community sample of mothers of 12-15 year-old adolescents (M = 13.3 years) (de Bruin et al., 2014). Exploratory and confirmatory factor analyses suggested six factors: (1) Listening with Full Attention (LFA), which was identical to the LFA factor proposed by Duncan et al. (2009); (2) Compassion for the Child (CC), which included child-focused items from the proposed Compassion for Self and Child (C-SC) and Non-judgmental Acceptance of Self and Child (NJA-SC) factors; (3) Non-judgmental Acceptance of Parental Functioning (NJAPF), which included items from the proposed NJA-SC and C-SC factors that were focused on parents; (4) Emotional Non-reactivity in Parenting (ENRP), which contained items from the proposed Self-regulation in Parenting (SRP), Emotional Awareness of Self and Child (EA-SC) and NJA-SC factors; (5) Emotional Awareness of the Child (EAC), which contained child-focused items from the proposed EA-SC factor; and (6) Emotional Awareness of Self (EAS), which contained items regarding parental emotion from the proposed SRP and NJA-SC factors. Items three and six from the original IMP were excluded due to poor psychometric properties. The resulting 29-item scale showed good fit (CFI = 0.96, RMSEA = 0.05) and internal consistency (α = 0.89). The Dutch-language IMP therefore differs from the original IMP by splitting items relating to emotional awareness, non-judgment and

compassion onto separate factors based on whether they are child- or parent-focused (de Bruin et al., 2014).

The IMP was next tested by Moreira and Canavarro (2017) with Portuguese-speaking community-recruited mothers of 1-18 year-old children (*M* = 5.86 years). Factor analyses in this study suggested five factors. LFA, NJAPF, CC and EAC factors were obtained, which were identical or extremely similar in content to the corresponding factors from the Dutch study (de Bruin et al., 2014). The fifth factor was Self-regulation in Parenting (SRP), which combined four of the five items from the Dutch ENRP factor, and all four items from the Dutch EAS factor. As in the Dutch study, the original IMP items three and six were excluded because of low factor loadings. The resulting five-factor 29-item solution (CFI = 0.93, RMSEA = 0.05) was therefore very similar to the Dutch solution, in its separation of child- and parent-focussed items, but without a separate EAS factor (Moreira & Canavarro, 2017).

The IMP has also been utilised in non-Western countries. In a community sample of Hong Kong Chinese parents (*N* = 837) of 2-19 year-old children (*M* = 7.59 years), a well-fitting four-factor solution (CFI = 0.94, RMSEA = 0.04) based on 23 items was identified (Lo et al., 2018). Compassion for the Child consisted primarily of items from the Dutch CC and EAC factors. Non-judgmental Acceptance in Parenting contained three items from each of the Dutch NJAPF and ENRP factors. Emotional Awareness in Parenting contained all the items from the Dutch EAS factor, plus two additional items from the Dutch NJAPF factor. Finally, Listening with Full Attention contained four of the five items from this factor in the original, Dutch and Portuguese IMPs. Items 3 and 6 were amongst several other items excluded due to low inter-item reliability. Like the Dutch and Portuguese studies, the factors identified in this study maintained the separation of child- and parent-focussed items. However, unlike the Dutch and Portuguese studies, no separate factor relating to emotional awareness of the child emerged. This was suggested by Lo et al. (2018) to reflect cultural

differences, namely that it is usual for Chinese parents to teach children to suppress their emotions, particularly in social contexts.

In another community sample of mainland Chinese parents (n = 294) of children aged 4-25 years, no meaningful model was found based on an initial exploratory factor analysis using all 31 items of the original Duncan et al. (2009) model. However, following deletion of one item and further amendment of item wording to suit Chinese readers, a 24-item four-factor model (CFI = .91, SRMR = .05, RMSEA = .04) was identified and confirmed. Six items relating to acceptance of parental functioning were excluded because they did not discriminate the parents scoring highest and lowest on the overall scale. The four factors were somewhat different from those identified amongst Hong Kong Chinese parents. Interacting with Full Attention contained most items from the original LFA dimension, but also contained an item relating to awareness of how emotions affect parenting and an item relating to regretting parent actions in response to child misbehaviour. Compassion and Acceptance contained a mix of items from the original C-SC, NJA-SC and SRP dimensions. The third factor, Self-regulation in Parenting, also consisted of a mix of items from the original SRP, NJA-SC and EA-SC dimensions. Finally, Emotional Awareness of Child had the same 3 items as both the Dutch and Portuguese EAC factors. Pan et al. (2019) noted that there were differences in parenting between Hong Kong and mainland Chinese parents, such as Hong Kong parents being less warm and more controlling.

Finally, an 18-item six-factor solution was obtained for a Korean translation of the IMP, using principal components analysis followed by confirmatory factor analysis (CFI = 0.97, RMSEA = 0.06), in community-recruited parents with children of 1-18 years (n = 554; M = 10.56 years) and pre-school children of 3-5 years (n = 283; M = 4.03 years) (Kim et al., 2018). Insight into Effect of Mood contained three items, all relating to an awareness of parent mood and its effect on parenting, from the proposed EA-SC factor in the original IMP.

Listening with Full Attention also contained three items from the originally proposed LFA. Non-judgmental Acceptance of Parental Functioning, Emotional Self-regulation, Compassion for the Child and Noticing the Child's Feelings all contained three items each from the corresponding Dutch NJAPF, EAS, CC and EAC factors. Numerous items were deleted due to low factor loadings, being semantically unrelated to other items, or too complex, suggesting that the IMP does not necessarily translate well to all other languages. The Korean factors maintained the separation of parent- and child-related items and therefore more closely resembled the Dutch and Portuguese models than the original Duncan et al. (2009) model of the IMP (Kim et al., 2018).

The number of identified factors has varied across the psychometric studies described above. However, the analyses of translated versions of the IMP have consistently found that the items relating to emotional awareness, non-judgment and compassion load onto different factors for parents and children, unlike the theoretical model proposed by Duncan et al. (2009), which combines parent- and child-focused items. This suggests that the five-dimension model proposed by Duncan et al. may not accurately reflect the construct of mindful parenting measured by the IMP. In addition, several of the reviewed studies tested the IMP in samples of parents with children ranging widely in age from infancy to adolescence. Although the parenting qualities embodied by the IMP are thought to be relevant for parenting children of different ages (Duncan et el., 2009), the IMP contains several items that appear to assume the child has verbal skills, so it is unclear whether it is appropriate for use with parents of pre-verbal infants.

Mindfulness programs for parents

Like general mindfulness, the skills associated with mindful parenting can be developed. Mindfulness-based programs specifically for parents were first offered approximately 15 years ago to parents of children with autism spectrum disorder (ASD) and

other developmental disabilities (Singh et al., 2006). The behavioral training programs which were then available to parents focussed upon unwanted child behaviors and taught specific skills to parents, to help them manage or prevent those unwanted behaviors. In contrast, it was proposed that mindful parenting training could improve family relationships and benefit children through transformational change in *parents* (Maloney & Altmaier, 2007; Singh et al., 2006). In other words, since the capacity for parental self-regulation is fundamental to good outcomes for a child (Sanders & Mazzucchelli, 2013), it was argued that the benefits of mindful parenting training may spill over from parent to child (Singh et al., 2020), without the need to teach specific behavior management skills. Although some programs weave mindfulness into behavioral parent training programs (for example, Coatsworth et al., 2010), this thesis is limited to considering programs that are primarily mindfulness-based, that is, they do not include substantial elements of other forms of training for parents.

The content of mindfulness-based programs for parents varies across different research groups. Some studies have used the MBSR program (Kabat-Zinn et al., 1992), without adaptation, with parents of children with ASD (Lewallen & Neece, 2015; Neece, 2014). Other studies have used programs adapted from MBSR and MBCT (for example, Bögels et al., 2008; Corthorn, 2018). These adapted programs have the same foundations of mindfulness as MBSR and MBCT, such as present-moment awareness and non-judgmental acceptance, but are tailored to address particular issues or stressors faced by parents. For example, the mindful parenting program developed from MBSR and MBCT by Bögels and Restifo (2013) incorporates elements of schema theory and therapy (Young, Klosko, & Weishaar, 2003), to demonstrate to parents how the parenting they received as a child might impact their own parenting and how they might start to free themselves from unhelpful patterns of behavior in difficult parenting situations.

The program developed by Bögels and Restifo (2013) is one of the most widely used mindful parenting programs. Broad themes explored with parents in the eight core sessions of this program are: (1) Automatic parenting: parenting stress and routine daily interactions with children can trigger automatic parenting, including the fight/flight/freeze response to stress; (2) Beginner's mind: turning off automatic parenting allows a broader and less judgmental perspective of the child, which may help parents adopt a kinder attitude towards themself and their child; (3) Reconnecting with the body: tuning in to the body develops present-moment awareness, including of parents' own emotional state. Self-compassion is introduced as an alternative response to parents' tendency to be harsh with themselves for perceived parenting failures; (4) Responding versus reacting: awareness of parents' habitual patterns of responding to parenting stress decreases automatic reacting and increases the ability to pause and consciously respond to a child; (5) Parenting patterns: parents learn how their own childhood affects their current parenting, and how to tolerate strong emotions that arise in difficult parenting situations, so they may choose different ways of responding; (6) Conflict and repair: parent-child conflict is inevitable, but relationships can be repaired by the parent; (7) Limit-setting and compassion: understanding limit-setting as a form of compassion, tolerating the strong emotions associated with limit-setting and practicing loving-kindness to soften parents' attitudes towards themselves and their child; (8) Mindful parenting as a process: parents reflect on what they have learned and consider how they might continue the process of mindful parenting.

In keeping with the aim of benefitting families by fostering change in parents, many studies of mindful parenting programs have provided mindfulness training only to parents (for example, Eames et al., 2015). However, studies involving families with adolescent children or children with attention deficit and hyperactivity disorder (ADHD), have generally augmented their programs by running mindfulness sessions for children in parallel to those

provided to their parents (Bögels et al., 2008; Zhang et al., 2017). Almost all studies of mindfulness programs for parents deliver training in an in-person, group format (Bögels et al., 2008; Neece, 2014). However, an online version of a mindful parenting program has recently been offered to parents, in which training is provided in a video format that parents can access individually, at a time that suits them (Boekhorst et al., 2020; Potharst et al., 2019). Mindfulness programs for parents have been studied in parents of children with and without clinical diagnoses, although there has been a strong emphasis on clinical programs (Kil & Antonacci, 2020).

Parents who attend mindfulness programs designed specifically for parents typically increase their levels of mindful parenting immediately after the program and maintain these improvements up to a year later (Haydicky et al., 2015; Meppelink et al., 2016; Ridderinkhof et al., 2017). In most studies parents have self-reported their level of mindful parenting, but this self-report is positively correlated with independent observations of the behaviors of parents with infants and adolescents, including the quality of parent-child interactions (Duncan et al., 2015; Potharst et al., 2020). Improvements in mindful parenting are therefore apparent to others, as might be expected given the interpersonal aspects of mindfulness in parenting, such as listening attentively (Duncan et al., 2009). Although individuals who are higher in general mindfulness also tend to be more mindful in their parenting (Corthorn & Milicic, 2016; Parent et al., 2020), greater general mindfulness does not consistently predict positive parenting behaviors or improvements in child outcomes (Meppelink et al., 2016; Neece, 2014; Parent et al., 2016; cf. Boekhorst et al., 2020). Accordingly, parents who wish to become more mindful to improve the relationship with their child, or their child's well-being, should seek mindfulness training that is specific to the parenting setting (Meppelink et al., 2016; Singh et al., 2020). In fact, mindful parenting training is likely to be particularly useful for these treatment-seeking parents, because their lower level of mindful parenting

differentiates them from non-treatment seeking parents in the community, even after considering parent mental health and various other parenting variables (Emerson et al., 2021).

Outcomes of mindful parenting programs for parents and children

Parenting stress

Numerous studies have investigated whether mindfulness training reduces parenting stress in parents of children with mental health problems. Parents of children and adolescents with primary externalizing disorders such as ASD (Neece, 2014) and ADHD (Haydicky et al., 2015) have reported small to large reductions in parenting stress following mindful parenting programs. Similar results have been reported by groups of parents whose children have a range of primary diagnoses, including both externalizing and internalizing disorders (Bögels et al., 2014; Emerson et al., 2019a). However, no published studies have investigated whether mindfulness training reduces parenting stress for parents of children whose primary diagnoses are for internalizing disorders only. In some clinical studies, parenting stress was reduced immediately after training and at follow-up (Potharst et al., 2018a), while in others a significant reduction was found only at follow-up (Haydicky et al., 2015; Potharst et al., 2017; Potharst et al., 2018b; van der Oord et al., 2012). In a small number of these studies, parents reported no reduction in parenting stress (Jones et al., 2018; Zhang et al., 2017).

A limited number of studies have also investigated if mindfulness training can benefit parents of children with no mental health diagnosis. Following an online mindful parenting program for mothers of pre-school aged children, who self-reported elevated parenting stress, mothers in the mindfulness group (n = 43) reported a small within-group reduction in that stress at follow-up (Potharst et al., 2019). In contrast, no reduction in parenting stress was reported by two groups of socio-economically disadvantaged parents after they attended a mindful parenting program (Eames et al., 2015; Maloney & Altmaier, 2007). The insignificant results in these two studies may have been due to their small sample sizes (N =

23 and $N = 12$, respectively). However, pre-intervention clinical status of parents or children could also affect results. For example, if parents of non-clinical children have lower baseline parenting stress, they may not be as likely to benefit from an intervention. It is also possible that the measures used in these studies picked up general stress associated with the low socio-economic status of these families, which the mindful parenting intervention did not effectively reduce.

While most studies of mindfulness programs for clinical and community-recruited parents have utilised a single group design, a few have included separate waitlist or active control groups. In some waitlist-controlled studies, larger reductions in parenting stress have been reported for the mindfulness groups, in parents of children with ADHD or ASD (Lo et al., 2017b; Neece, 2014) and community-recruited parents (Corthorn, 2018). However, in two other studies involving non-clinical children of parents with a history of depression (Mann et al., 2016) or with self-reported elevated parenting stress (Potharst et al., 2019), no significant between-group difference in parenting stress was found. In the only two studies using active controls, larger reductions in parenting stress were reported in the mindfulness group compared to an education group for parents with self-reported elevated parenting stress (Chaplin et al., 2018) and a skills-training group for parents of children with developmental disorders (Ferraioli & Harris, 2013).

On the whole, the evidence suggests that mindfulness programs for parents may result in reduced parenting stress. However, only two controlled studies (Chaplin et al., 2018; Corthorn, 2018) explicitly measured mindful parenting, so although both these studies found it did increase after the program, there is limited evidence that increases in mindful parenting are responsible for reductions in parenting stress. It is also unclear whether the reduction in parenting stress after a mindful parenting program depends upon the nature or severity of the child's mental health problem. All clinical intervention studies measuring parenting stress as

an outcome were conducted with families where either all or the great majority of children had primary externalizing disorders. As there are no studies measuring parenting stress specifically in parents of children with primary internalizing disorders, it is not known whether mindful parenting programs reduce stress for this group of parents. The position is also unclear for parents of children without a mental health diagnosis, due to the more variable results from the non-clinical studies.

Parenting quality

Intervention studies have also investigated whether mindfulness training for parents can improve parenting quality, by increasing positive parenting practices. In mothers referred for parenting difficulties with their 0-18 month-old babies, parental responsivity and affection improved after a mindful parenting program, but no change was reported in parental attention to the baby (Potharst et al., 2017). Similarly, in mothers experiencing parenting difficulties with their 18-48 month-old toddlers, observational assessment confirmed moderate improvements in maternal sensitivity and acceptance towards the child (Potharst et al., 2018b). For parents of older children (M = 10.7 years) with a range of mental health diagnoses, which were primarily externalizing disorders, there were small to moderate improvements in parental encouragement of child autonomy, but no significant change in acceptance of the child (Bögels et al., 2014). Finally, for a group of parents of adolescents with ADHD, a non-significant improvement in family functioning, including parent-child communication, was reported (Haydicky et al., 2015). However, although non-significant, possibly due to the small number of families in this study (N = 15), the moderate size of the improvement (d = 0.47) suggests it was clinically relevant.

There is also evidence that parents of children who have mental health problems, and parents experiencing other parenting difficulties, reduce their negative parenting practices after mindfulness programs. For example, parents of children and adolescents, the majority of

whom had externalizing disorders, reported small to moderate reductions in over-reactivity (Emerson et al., 2019a; Potharst at al., 2018a; van der Oord et al., 2012), rejection (Bögels et al., 2014; Potharst et al., 2017), hostility (Potharst et al., 2017), laxness (de Bruin et al., 2015), verbosity (de Bruin et al., 2015), overprotection (Bögels et al., 2014) and experiential avoidance (Emerson et al., 2019a). Randomised controlled studies have also found greater reductions in negativity and over-reactivity for self-reported stressed parents, following mindfulness groups compared to parent-education or waitlist control groups (Chaplin et al., 2018; Potharst et al., 2019). However, several other studies have reported no reductions in parental over-reactivity, laxness or verbosity in stressed parents of toddlers (Potharst et al., 2018b), or in parents with children or adolescents with ADHD (van der Oord et al., 2012) or ASD (de Bruin et al., 2015), possibly due to low sample sizes ($N = 11$ to $N = 29$).

Overall, the intervention studies support the correlational research showing that more mindful parenting is associated with higher quality parenting, but the research has not typically examined which aspects of improved parenting predict improved child outcomes. One study has found that reduced parental over-reactivity accounts for improvements in child externalizing symptoms, while reduced parental experiential avoidance partially accounts for improvements in child internalizing symptoms (Emerson et al., 2019a). As most intervention studies assessing parenting quality have been conducted with families whose children have mental health diagnoses, it is not clear whether parenting quality would be improved in non-clinical families. As was the case with parenting stress, the studies that assessed parenting quality amongst clinical families were done with families where all or most of children had externalizing disorders. No studies were identified that measured changes in parenting quality specifically in families of children with primary internalizing disorders. There are also very few studies using randomized controlled designs to investigate parenting quality variables, and only one of these studies (Chaplin et al., 2018) reported on changes in mindful parenting.

Therefore, as with parenting stress, there is limited evidence that increases in mindful parenting are responsible for improvements in parenting quality observed after mindful parenting programs.

Child mental health outcomes

A number of studies have looked at whether mindfulness programs for parents result in better child outcomes, across internalizing, externalizing, social and cognitive domains of functioning. Small to large post-program reductions in child externalizing problems have been reported in several studies, with these reductions generally maintained at follow-up (Bögels et al., 2014; Haydicky et al., 2015; Meppelink et al., 2016; Zhang et al., 2017). However, some studies of children with ASD have reported no reduction in externalizing symptoms (de Bruin et al., 2015; Jones et al., 2018). The reductions have been reported by both parents (Bögels et al., 2014) and children (Ridderinkhof et al., 2017), who typically had primary diagnoses of disorders including ASD and ADHD, although reductions in externalizing problems have also been reported by parents of non-clinical children (Mann et al., 2016). In the few waitlist-controlled studies that have been conducted, child externalizing problems have reduced more for mindfulness intervention groups than for waitlist groups, in both community-recruited children and those with primary externalizing disorders (Lo et al., 2017b; Mann et al., 2016; Neece, 2014). However, one controlled trial for families of children with developmental disorders found no difference between groups (Lo et al., 2017a).

Small to moderate improvements in child internalizing outcomes have also been reported after mindful parenting programs by parents (Emerson et al., 2019a; Meppelink et al., 2016), and by adolescents with ASD (Ridderinkhof et al., 2017) or recovering from depression (Racey et al., 2017). Post-program improvements in internalizing problems were typically maintained at follow-up (Emerson et al., 2019a; Ridderinkhof et al., 2016). However, in other studies, no improvements in internalizing symptoms were reported until

follow-up (de Bruin et al., 2015; Haydicky et al., 2015), making it unclear whether the improvements were due to the program or some other factor impacting with the passage of time. Two small studies involving adolescents with primary externalizing disorders found moderate-sized improvements in internalizing problems, although these gains were non-significant, potentially due to their small sample size (N = 14 families, Bögels et al., 2008; N = 10 families, van de Weijer-Bergsma et al., 2012). Of three waitlist-controlled trials, two found the co-morbid internalizing problems of children with ADHD or ASD reduced more when their parents were in the mindfulness intervention group (Lo et al., 2017b; McGregor et al., 2020), while one found no difference between groups (Neece, 2014).

With respect to cognitive outcomes for children, some studies have reported fewer attention problems post-intervention and at follow-up (Ridderinkhof et al., 2017), while others have found no change (Haydicky et al., 2015). No significant changes have been found in metacognitive function (Zhang et al., 2017) or learning difficulties (Haydicky et al., 2015). Two waitlist-controlled trials have addressed cognitive outcomes. One study of school-aged children with ADHD found greater improvements in children's executive function for the intervention group (Lo et al., 2017b), while the other study with pre-school aged children with ASD found a moderate (d = 0.71), albeit non-significant, difference in favour of the mindfulness group (Neece, 2014). Finally, some studies have found improved social outcomes for children after mindfulness training for parents (Bögels et al., 2008; Haydicky et al., 2015; Lewallen & Neece, 2015), while others have not (de Bruin et al., 2015; Jones et al., 2018).

The results of the studies reviewed above have been mixed, but overall, mindful parenting programs are associated with, and may improve, child mental health. Some of the studies provided separate mindfulness training to children (for example, Haydicky et al., 2015; Racey et al., 2017), as well as to their parents, so in those studies, changes in child

outcomes could have resulted from the mindfulness training provided to the parent, the child or both. The majority of studies assessing child outcomes have been conducted with parents of clinic-referred children, with primary externalizing disorders such as ADHD or ASD. A small number of studies have involved children with a range of primary diagnoses, but within those studies, most children had a primary externalizing disorder (for example, Bögels et al., 2014; Emerson et al., 2019a). Only one study has been conducted solely with parents whose child had a primary internalizing disorder (Racey et al., 2017). The findings of most studies regarding changes in internalizing symptoms therefore relate to co-morbid internalizing symptoms, leaving it unclear whether mindful parenting programs would consistently reduce primary internalizing symptoms.

Current research questions

Child internalizing problems

Most studies of mindfulness programs for parents have focused on parents of children with primary externalizing disorders, perhaps because parenting stress tends to be highest in parents of children with disorders such as ASD (Barroso et al., 2018). However, parents of children with primary internalizing problems also experience elevated parenting stress (Vaughan et al., 2012), for example having to cope with frequent or persistent withdrawn or anxious mood states, or child attempts to avoid anxiety-inducing situations. Despite this, there is a notable absence of research on mindful parenting programs for families of children with primary internalizing difficulties. While numerous studies have reported on the co-morbid internalizing problems of children with primary externalizing disorders, some of those children will have developed internalizing problems as a result of their externalizing problems, for example when these problems lead to social rejection or poor performance at school (Willner et al., 2016). In contrast, the risk factors for children with primary internalizing problems include a genetic vulnerability to internalizing problems, or continued

exposure to unhelpful parenting behaviors such as overprotectiveness (Rapee, 2012). If mindful parenting programs impact the risk factors for internalizing problems for these two groups of children differently, then they may also have different effects upon their internalizing problems. Further research is needed to confirm the impact of mindful parenting programs for families of children who suffer from primary internalizing problems.

Child clinical status and age

The above review suggests that mindfulness programs for parents reduce parenting stress, and improve parenting quality and child mental health, although there is some variability in the results of the reviewed studies. This may relate in part to the clinical status of parents attending the program, or their children. There are relatively few studies of community-recruited families, and the results of these studies have been more mixed than for clinical studies. Parents or children with higher levels of baseline functioning may report more variable results because they have less room for improvement. Child age may also be a factor. Many programs have been attended by parents of children ranging widely in age (for example, 2-21 years in Bögels et al., 2014). Since children's needs vary across developmental stages (Karavasilis et al., 2003), these programs may impact families with children at various stages differently. There is currently no systematic or quantitative evaluation of the data on outcomes of mindfulness training for parents. Such an evaluation would be helpful, to accurately summarize the available results and to identify whether factors such as clinical status or child age do affect program outcomes. This information is important in deciding whether mindful parenting programs should be provided for parents only in a clinical context, or more widely in the community, and whether they should be tailored for parents depending on child age.

Validation of the IMP

Although almost all the available research uses the IMP to measure mindful parenting, there is no published evidence regarding the factor structure of the English-language version of the 31-item IMP. Given the discrepancy between the theoretical model of mindful parenting and the empirically established models measured by translated versions of the IMP, and the question as to the IMPs suitability for parents of infants, there is a clear need to validate the 31-item IMP in an English-language population, to establish an appropriate model for this population, and determine whether it is suitable for parents of infants as well as older children.

Thesis aims

The goal of this thesis is to contribute to our understanding of whether mindful parenting programs reduce parenting stress and child psychological problems, and how these programs might deliver benefits to children. This will be done by addressing the gaps in the literature outlined above, in particular the lack of research regarding the outcomes of mindful parenting programs for families of children with primary internalizing problems. The specific aims of this thesis are:

1. to systematically and quantitatively evaluate the existing evidence for the impact of mindful parenting programs on parenting stress and child mental health and to establish whether clinical status or child age affects those outcomes (Chapter 2);
2. to empirically validate the IMP in an English-language group of parents of children and infants, to establish whether the model of mindful parenting hypothesized by Duncan et al. (2009) is appropriate for use in these populations (Chapter 3);
3. using an empirically validated model of mindful parenting, to examine for parents of children and infants the relationships between mindful parenting, child internalizing problems and parenting variables that might contribute to or maintain child internalizing

problems, so as to identify parent factors that might explain how mindful parenting reduces child internalizing problems (Chapter 4); and

4. to investigate whether mindful parenting programs for families of children with primary internalizing concerns reduce parenting stress and child internalizing problems and improve parent factors that could explain the relationship between mindful parenting and child internalizing problems (Chapter 5).

CHAPTER TWO. Systematic review and meta-analysis

A systematic review and meta-analysis regarding the effect of mindfulness interventions for parents on parenting stress and youth psychological outcomes

Chapter 2 contains a systematic review of the research on mindful parenting interventions and a meta-analysis of results from intervention studies for parenting stress and child psychological outcomes.

This Chapter reproduces the text from the published article referred to below (Appendix A1), with minor amendments made to the published version to ensure that the format of Chapter 2 is consistent with the layout of this thesis.

Burgdorf, V., Szabó, M., & Abbott, M. J. (2019). The effect of mindfulness interventions for parents on parenting stress and youth psychological outcomes: A systematic review and meta-analysis. *Frontiers in Psychology*, *10:1336*. doi: 10.3389/fpsyg.2019.01336

Abstract

Background: The psychological well-being of parents and children is compromised in families characterized by greater parenting stress. As parental mindfulness is associated with lower parenting stress, a growing number of studies have investigated whether mindfulness interventions can improve outcomes for families. This systematic review and meta-analysis evaluates the effectiveness of mindfulness interventions for parents, in reducing parenting stress and improving youth psychological outcomes.

Methods: A literature search for peer-reviewed articles and dissertations was conducted in accordance with PRISMA guidelines in the PsycInfo, Medline, PubMed, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials, and ProQuest Dissertations & Theses databases. Studies were included if they reported on a mindfulness-based intervention delivered in person to parents with the primary aim of reducing parenting stress or improving youth psychological outcomes**.**

Results: Twenty-five independent studies were included in the review. Eighteen studies used a single group design and six were randomized controlled trials. Within-groups, meta-analysis indicated a small, post-intervention reduction in parenting stress ($g = 0.34$), growing to a moderate reduction at 2-month follow-up ($g = 0.53$). Overall, there was a small improvement in youth outcomes ($g = 0.27$). Neither youth age or clinical status, nor time in mindfulness training, moderated parenting stress or overall youth outcome effects. Youth outcomes were not moderated by intervention group attendees. Change in parenting stress predicted change in youth externalizing and cognitive effects, but not internalizing effects. In controlled studies, parenting stress reduced more in mindfulness groups than control groups ($g = 0.44$). Overall, risk of bias was assessed as serious.

Conclusions: Mindfulness interventions for parents may reduce parenting stress and improve youth psychological functioning. While improvements in youth externalizing and cognitive

outcomes may be explained by reductions in parenting stress, it appears that other parenting factors may contribute to improvements in youth internalizing outcomes. Methodological weaknesses in the reviewed literature prevent firm conclusions from being drawn regarding effectiveness. Future research should address these methodological issues before mindfulness interventions for parents are recommended as an effective treatment option for parents or their children.

Introduction

Parenting stress is associated with negative outcomes for parents and their children (Davis & Carter, 2008; Deater-Deckard et al., 2016). Recently, several studies have linked lower parenting stress with higher parental mindfulness (e.g., Parent et al., 2016; Campbell et al., 2017). Accordingly, a growing number of studies have delivered mindfulness-based interventions to parents, with the aim of reducing parenting stress and improving psychological outcomes for youth (e.g., Zhang et al., 2017; Jones et al., 2018). However, no quantitative synthesis of the literature on the effectiveness of such interventions is currently available. This review and meta-analysis was conducted to evaluate the effectiveness of mindfulness interventions for parents, in reducing parenting stress and improving youth psychological outcomes.

Parents who experience higher parenting stress report poorer psychological well-being (Lavee et al., 1996), more negative affect and less positive affect (Deater-Deckard et al., 2016), and lower marital quality (Robinson & Neece, 2015). In families characterized by greater parenting stress, children have more internalizing and externalizing problems (Huth-Bocks & Hughes, 2007; Davis & Carter, 2008; Robinson & Neece, 2015), poorer cognitive skills such as executive function (de Cock et al., 2017) and more social and interpersonal difficulties (Anthony et al., 2005). Greater parenting stress is also associated with negative parenting behaviors, including harsh discipline (Venta et al., 2016) and hostility (McMahon & Meins, 2012), which have been shown to contribute to poorer child and adolescent psychological outcomes (Rominov et al., 2016; Pinquart, 2017). Managing parenting stress is therefore important for the psychological health of parents and their children. It has been suggested that incorporating mindfulness into the parent-child relationship may be one way of achieving this goal (Kabat-Zinn & Kabat-Zinn, 1997; Dumas, 2005; Duncan et al., 2009; Bögels et al., 2010).

In the context of contemporary Western psychology, mindfulness is typically described as a psychological process of bringing non-judgmental awareness to experiences occurring in the present moment (Kabat-Zinn, 2015). Individuals differ in their disposition for mindfulness but can develop their skills through regular practice (Kabat-Zinn, 2003, 2015; Baer et al., 2006). The application of mindfulness to parenting was first described by Kabat-Zinn and Kabat-Zinn (1997). These authors defined mindful parenting as paying non-judgmental, non-reactive attention to each moment with the child, so the parent is aware of their child's needs in any moment. Building on this account, Duncan et al. (2009) developed a model of mindful parenting comprising five dimensions: listening to the child with full attention, non-judgmental acceptance of self and child, emotional awareness of self and child, self-regulation in parenting, and compassion for self and child. Mindful parents reduce their use of automatic but unhelpful ways of evaluating or interacting with their child, thus making way for more positive parent-child relationships (Dumas, 2005; Duncan et al., 2009). For example, mindfulness can assist parents to break a habitual pattern of automatically reacting with anger to a child's tantrum, which is likely to elicit further negative affect from the child (Dumas, 2005).

In light of these ideas, mindfulness-based interventions such as the 8-week Mindfulness-based Stress Reduction program (MBSR; Kabat-Zinn et al., 1992), have been offered to parents who experience high levels of stress, anxiety, or depression (Bazzano et al., 2015). Other researchers have adapted the MBSR program specifically to the parenting context (Bögels et al., 2014; Eames et al., 2015). These mindful parenting programs are based on the same principles of mindfulness as MBSR and follow a similar session structure. MBSR for parents and mindful parenting programs both aim to improve outcomes for families, particularly reducing parenting stress (for example, Neece, 2014; Chaplin et al., 2018). However, mindful parenting programs focus specifically on the stressors faced by

parents and the patterns of interaction they have with their children. For example, the well-known “observing a raisin” exercise is used in MBSR to illustrate the concept of stepping out of automatic pilot. In one mindful parenting course (Bögels & Restifo, 2014), this exercise is followed by a homework practice in which parents mindfully observe their child, using the skills they learnt while observing a raisin.

In the past decade, a number of studies have explored the effects of both MBSR and mindful parenting interventions on parenting stress. Following MBSR programs, reductions in parenting stress were reported by parents of pre-school aged children with Autism Spectrum Disorder (ASD) and other developmental delays (Chan & Neece, 2018). In a similar clinical sample, the reductions in parenting stress were larger for the MBSR group than a waitlist control group (Neece, 2014). Mindful parenting interventions have been made available in community, as well as in clinical settings. In two small studies of community-recruited parents, no reduction in parenting stress was found following mindful parenting training (Maloney & Altmaier, 2007; Eames et al., 2015), whilst in a larger community study, a reduction was reported (Potharst et al., 2018a). The difference in sample sizes may account for the contrasting findings in these studies. In the clinical context, parents of children and adolescents with a range of externalizing and internalizing disorders (Bögels et al., 2014; Ridderinkhof et al., 2017) reported both immediate and maintained reductions in parenting stress following mindful parenting interventions. In contrast, parents of children with Attention Deficit and Hyperactivity Disorder (ADHD) reported a moderate reduction in parenting stress only at 2-month follow-up (Van der Oord et al., 2012). The majority of mindful parenting intervention studies have used a single group design. However, a small number of controlled studies have found bigger reductions in parenting stress in mindful parenting groups than control groups, in community and clinical settings (Ferraioli & Harris, 2013; Lo et al., 2017a; Corthorn, 2018). In sum, although results are mixed, MBSR and

mindful parenting interventions appear to be associated with reduced levels of parenting stress, both in community and clinical contexts.

Studies of MBSR and mindful parenting have also investigated outcomes for the children of parents who attended the interventions. Most studies investigated internalizing and externalizing symptoms, which are the most common psychological problems in youth (Bayer et al., 2008). A number of studies also examined cognitive and social domains of functioning, both of which are related to important longer-term problems, such as poorer academic achievement (Malecki & Elliott, 2002; Daley & Birchwood, 2010). Following their parents' attendance at MBSR, pre-school aged children with ASD and other developmental delays showed significant improvements in cognitive, externalizing and social outcomes (Lewallen & Neece, 2015; Neece, 2014). Following mindful parenting training, small to moderate reductions in youth internalizing problems have been reported by youth with a range of mental health problems and their parents (Bögels et al., 2014; Haydicky et al., 2015; Racey et al., 2017). In contrast, in a study involving 10 adolescents with ADHD, no significant improvements in adolescent internalizing problems were reported (van de Weijer-Bergsma et al., 2012). Similarly, externalizing problems have been reported to reduce after mindful parenting interventions by parents (Bögels et al., 2014; Meppelink et al., 2016) and youth (Bögels et al., 2008; Ridderinkhof et al., 2017) in some studies, but not in others (De Bruin et al., 2015; Jones et al., 2018). In relation to cognitive outcomes, parents have reported fewer attention problems (Ridderinkhof et al., 2017), but no reductions in metacognitive (Zhang et al., 2017) or learning problems (Haydicky et al., 2015). Finally, after mindful parenting interventions, youth social outcomes improved in some studies (Bögels et al., 2008; Haydicky et al., 2015) but not others (de Bruin et al., 2015; Jones et al., 2018). The results of the literature relating to youth outcomes are therefore mixed.

Considering the number of studies and the mixed results they report, a quantitative evaluation of the available data is needed. However, there are no published meta-analyses in this field of research. Further, although two narrative reviews have been conducted, neither of these focuses exclusively on mindfulness interventions delivered to parents. Harnett and Dawe (2012) reviewed 24 interventions incorporating mindfulness, for school students and their carers. Only two of those interventions were delivered to parents. Moreover, those two interventions were not primarily mindfulness interventions. Instead, they incorporated an element of mindfulness into existing behavioral skills programs. Townshend et al. (2016) reviewed seven randomized controlled trials (RCTs) of various interventions delivered to parents. Again, only two of the reviewed trials delivered interventions that were primarily mindfulness-based, while the others incorporated aspects of mindfulness in behavioral or emotion-coaching programs. A review focused upon mindfulness interventions for parents is therefore warranted. Accordingly, the aim of this review was to systematically and quantitatively evaluate the effectiveness of mindfulness interventions for parents. To reflect the range of outcomes covered in the existing literature, the outcomes of interest in this review were parenting stress, and youth functioning across internalizing, externalizing, cognitive and social domains. Due to the noted similarities between mindful parenting interventions and other mindfulness-based interventions such as MBSR for parents, we amalgamated these studies into a single group and will refer to them together as "mindfulness interventions for parents".

Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement and checklist (Moher et al., 2009) were used to guide the conduct and reporting of this review.

Eligibility Criteria

Studies were eligible for inclusion in the review if they reported on a mindfulness-based intervention delivered in person to parents, with a primary aim of reducing parenting stress or improving youth psychological outcomes. Studies that met this criterion that also delivered a parallel mindfulness intervention to a child of the participant parents were included. Studies were excluded if they reported on an intervention that was not a mindfulness-based intervention or if the intervention incorporated other forms of therapy or training such as behavioral parent training, acceptance and commitment therapy or cognitive therapy. Studies were also excluded if they used an individual case series or qualitative design.

Search Strategy and Information Sources

A comprehensive literature search was conducted between 9 August and 11 October 2018, in the PsycInfo, Medline, PubMed, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials and ProQuest Dissertations & Theses databases, for peer-reviewed articles and published dissertations indexed up to and including 30 September, 2018. In PsycInfo, we searched the database subject headings Mindfulness and Meditation, and the keywords mindful* and meditation, in combination with the subject headings Parenting, Parents, Parenting Style, Parenting Skills, Parental Attitudes, Parent Training, Childrearing Attitudes, Childrearing Practices, Family Intervention and Family Therapy and the key words parent*, child?rearing, family intervention* and family therap*. For the search, no limitations were placed on the language in which the study was reported. The reference lists of included articles were also searched for relevant studies, but no additional studies were identified in this way.

The database search was conducted by the first author. After removal of duplicates, a title and abstract screening of all articles was conducted by the first author to assess the

studies against the eligibility criteria. One-third of the articles were also screened independently by a Masters-level graduate student in clinical psychology. A full-text review of the short-listed articles was then conducted independently by both the first author and the same graduate student, with 92% agreement between the two reviewers on the selection of studies for inclusion in the review.

Data Extraction

All data was extracted by the first author. The data extracted from each study included participant characteristics, youth age and gender, parent and youth psychopathology, study design and details of the intervention. These study details are presented in Table 1. Effect sizes reported by the study authors for parenting stress and youth psychological outcomes were also extracted and are included in Tables 2, 3 respectively. Quantitative data needed for calculation of effect sizes in the meta-analysis were also extracted. Where a study did not report the data required for calculation of effect sizes, they were requested by email from the corresponding author of the study. If no response was received, the study was included in the systematic review (in Tables 1-3), but not included in the quantitative analyses.

Table 1

Details of included studies

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Bazzano et al. (2015)	N=66 parents/ caregivers (77% mothers/ female)	NR	Non-clinical	Clinical: ASD (59%), ID (21%), cerebral palsy (5%), Down syndrome (3%), other diagnoses (11%)	Uncontrolled trial: 1. MP	MBSR adapted for parents of children with disabilities	Parent/ caregiver group	8 weeks x 2h + 4h silent retreat; total 20h
Bögels et al. (2008)	N=14 parents (57% mothers) and 14 adolescents	M=14.4 (11-17) 57% boys	Clinical: DD (21%), PTSD (21%), ADHD (14%), PDD (14%), Asperger's (7%)	Clinical: ODD (43%), PDD (21%), ADHD (14%), CD (14%) ASD (7%)	WLC trial: 1. MP	MBCT adapted for parents	Parent group and separate adolescent mindfulness group	8 weeks x 1.5h; total 12h (for both parent and adolescent groups)
Bögels et al. (2014)	N=86 parents (89% mothers)	M=10.7 (2-21) 60% boys	Clinical: Parent-child relational problem (58%), DD (16%), adjustment disorder (8%), BD (2%), ADHD (1%), BPD (1%)	Clinical: ADHD (47%), ASD (21%), AD (7%), DD (5%), ODD (4%), LD (4%), CD (1%), schizophrenia (1%)	WLC trial: 1. MP	MP (Bögels & Restifo, 2013)	Parent group	8 weeks x 3h; total 24h
Chan & Neece (2018)[#]	N=80 parents (96% mothers)	M=4.18 (2.5-5) 71% boys	Non-clinical	Clinical: ASD (64%), other developmental delay (36%)	RCT: 1. MBSR 2. Wait list control	MBSR: MBSR program Control: Nil (offered MBSR program after completion of waitlist period)	MBSR: Parent group Control: Nil	MBSR: 8 weeks x 2h + 6h retreat; total 22h Control: Nil

Table 1 continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Chaplin et al. (2018)	N=100 mothers	M=14.04 (12-17) 48% boys	Non-clinical: self-reported parenting stress	Non-clinical: inclusion criteria did not require diagnosis or referral, but 53% of families receiving psychotherapy	RCT: 1. MP 2. Parent education control	MP: Parenting Mindfully (based on MBSR & Duncan et al., 2009) Control: presentation, handouts on adolescent development and parenting, question time	MP: Parent group Control: Parent group	MP: 8 weeks x 2h; total 16h Control: 3 meetings x 30 min each
Corthorn (2018)	N=43 mothers	M=2.9 (intervention group) and M=3.0 (control group) Overall range = 2-5 Gender NR	Non-clinical	Non-clinical	Controlled trial: 1. MP 2. No treatment control	MP: MBSR adapted for parents Control: Nil	MP: Parent group Control: Nil	MP: 8 weeks x 2h; total 16h Control: Nil
de Bruin et al. (2015)	N=29 parents (62% mothers) and 23 adolescents	M=15.8 (11-23) 74% boys	Non-clinical	Clinical: ASD (52%), PDD (48%)	Uncontrolled trial: 1. MP	MP (Bögels & Restifo, 2013)	Parent group and separate adolescent mindfulness group	9 weeks x 1.5h; total 13h (for both parent and adolescent groups)
Eames et al. (2015)	N=23 mothers	M=3.14 (1-6) 55% boys	Non-clinical: low socio-economic community	Non-clinical	Uncontrolled trial: 1. MP	Mindfulness-based wellbeing for parents (adapted from MBSR)	Parent group	8 weeks x 2h; total 16h

Table 1 continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Ferraioli & Harris (2013)	N=15 parents (66% mothers)	NR (all under 18)	Non-clinical	Clinical: ASD (66%), PDD (34%)	RCT: 1. MP 2. Skills-based parent training Participants matched on parenting stress scores.	MP: Mindfulness-based parent training (adapted from mindfulness module, Linehan, 1993) Control: behavioral parent training for parents of children with ASD	MP: Parent group Control: Parent group	MP: 8 weeks x 2h; total 16h Control: 8 weeks x 2h; total 16h
Haydicky et al. (2015)	N=17 parents (94% mothers) and 18 adolescents	M=15.5 (13-18) 72% boys	Non-clinical	Clinical: ADHD	WLC trial: 1. MP	MP (adapted from Bögels et al., 2008)	Parent group and separate adolescent mindfulness group	8 weeks x 1.5h; total 12h (for both parent and adolescent groups)
Jones et al. (2018)	N=21 parents (86% mothers)	M=10.53 (4-16) Note: mean VABS functioning ability = 4.95 62% boys	Non-clinical	Clinical: ASD (76%), ID (10%), cerebral palsy (10%), Down's syndrome (5%)	Uncontrolled trial: 1. MP	Mindfulness-based wellbeing for parents (adapted from MBSR)	Parent group	8 weeks x 2h; total 16h
Lewallen & Neece (2015)#	N=24 mothers	M=3.40 (2.5-5) 67% boys	Non-clinical	Clinical: ASD (83%), other developmental delay (17%)	RCT: 1. MBSR 2. Wait list control	MBSR: MBSR program Control: Nil (offered MBSR after waitlist)	MBSR: Parent group Control: Nil	MBSR: 8 weeks x 2h + 6h retreat; total 22h Control: Nil

Table 1 continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Lo et al. (2017a)	N=180 parents (94% mothers)	NR (pre-school age) 77% boys	Non-clinical	Clinical: ASD (57%), developmental delay (28%), ADHD (7%), other diagnosis (8%)	RCT: 1. MP 2. No treatment control	MP: MP adapted from Bögels (2013) and Coatsworth et al. (2015) Control: Nil (mindfulness workshop, after study)	MP: Parent group Control: Nil	MP: 6 weeks x 1.5h; total 9h Control: Nil
Lo et al. (2017b)	N=100 parents (96% mothers)	M=6.25 (5-7) 83% boys	Non-clinical	Clinical: ADHD	RCT: 1. MP 2. Wait list control	MP: MP adapted from Bögels & Restifo (2014) & Coatsworth et al. (2010) Control: Nil (offered MP after waitlist)	MP: Parent group and separate child mindfulness group Control: Nil	MP: 6 weeks x 1.5h; total 9h (for parent groups); 8 weeks x 1h (for child groups). Control: Nil
Maloney & Altmaier (2007)	N=12 parents (83% mothers) and 12 children	M=3.9 (2.75-6) Gender NR	Non-clinical: participants recently divorced or separated	Non-clinical	Uncontrolled trial: 1. MP	MP (Placone-Willey, 2002)	Parent group	12 weeks; session length NR; total 15h
Mann et al. (2016)	N=38 parents (95% mothers)	Mean NR (2-6) Gender NR	Non-clinical: history of depression (≥ 3 episodes & in full/partial remission)	Non-clinical	RCT: 1. MP + usual care 2. Usual care control	MP: MBCT adapted for parents with history of depression Control: usual care	MP: Parent group Control: Nil	MP: 8 weeks, session length & total hours NR Control: Nil

Table 1 continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Meppelink et al. (2016)	N=70 parents (93% mothers)	M=8.7 (range NR) 57% boys	Non-clinical	Clinical: ASD (29%), parent-child interaction problem (26%), ADHD (24%), AD (3%), ODD (1.5%), adjustment disorder (1.5%), other diagnosis (6%)	Uncontrolled trial: 1. MP	MP (Bögels & Restifo, 2014)	Parent group	8 weeks x 3h; total 24h
Neece (2014)	N=46 parents (78% mothers)	M=3.84 (2.5-5) 71% boys	Non-clinical	Clinical: ASD	RCT: 1. MBSR 2. Wait list control	MBSR: MBSR Control: Nil (offered MBSR after waitlist)	MBSR: Parent group Control: Nil	MBSR: 8 weeks x 2h + 6h retreat; total 22h Control: Nil
Potharst et al. (2017)	N=37 mothers	M=0.86 (0-1.5) 50% boys	Clinical: mental health disorder (84%) or referral for difficulties related to mothering	Non-clinical: sleeping problems (27%), excessive crying (18%)	Uncontrolled trial: 1. MP	MP adapted for mothers with a baby (Bögels et al., 2014)	Mother/baby group	8 weeks x 2h; total 16h
Potharst et al. (2018a)[a] Non-clinical setting	N=98 parents (82% mothers)	M=8.9 (0-35.3) Gender NR	Non-clinical, self-reported parenting stress	Non-clinical	WLC trial: 1. MP	MP shortened for non-clinical context (Bögels & Restifo, 2013)	Parent group	8 weeks x 2h; total 16h[b]
Potharst et al. (2018a) Clinical setting	N=89 parents (80% mothers)	M=11.7 (2.6-25.4) Gender NR	Non-clinical	Clinical: ADHD (31%), ASD (23%), DICA (10%), AD (5%), PTSD (4%), MD (1%), OCD (1%), ODD (1%), IED (1%), unknown diagnosis (21%)	Uncontrolled trial: MP	MP (Bögels & Restifo, 2013)	Parent group	8 weeks x 3h + 3h booster session, 8 weeks post-completion; total 27h[c]

Table 1 continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Racey et al. (2017)	N=29 parents (97% mothers) and 25 adolescents	M=16.4 (14-18) 0% boys	Non-clinical: 50% parents had history of depression	Clinical: partially recovered from depressive episode	Uncontrolled trial: 1. MBCT	MBCT adapted for parents and youth	Parent group and separate adolescent mindfulness group	8 weeks (for both parent and adolescent groups); session length and total hours NR
Ridderinkhof et al. (2017)	N=74 parents (58% mothers) and 45 adolescents	M=13.03 (8-19) 80% boys	Non-clinical	Clinical: ASD (IQ ≥ 80)	Uncontrolled trial: 1. MP	MP adapted for parents of children with ASD from Bögels & Restifo (2014)	Parent group and separate adolescent mindfulness group	9 weeks x 1.5h (for both parent and adolescent groups) + 1x joint parent/adolescent booster session, 9 weeks post-completion; total 15h
Short et al. (2017)	N=59 mothers	NR (≤ 3) Gender NR	Clinical: in treatment for opioid and other substance-use disorders	Non-clinical	Uncontrolled trial: 1. MP	MP adapted from MBSR for parents with high rates of trauma	Parent group	12 weeks x 2h; total 24h
van de Weijer-Bergsma et al. (2012)	N=11 parents (55% mothers) and 10 adolescents	M=13.4 (11-15) 50% boys	Non-clinical	Clinical: ADHD	Uncontrolled trial: 1. MP	MP (Bögels et al., 2008 and van der Oord et al., 2012)	Parent group and separate adolescent mindfulness group	8 weeks x 1.5h (for both parent and child groups) + 1x joint parent/ adolescent booster session, 8 weeks post-completion; total ~13h
van der Oord et al. (2012)	N=22 parents (95% mothers) and 22 children	M=9.55 (8-12) 73% boys	Non-clinical	Clinical: ADHD	WLC trial: MP	MP adapted for parents of children with ADHD from Bögels et al. (2008) and Bögels et al. (2010)	Parent group and separate mindfulness group for children	8 weeks x 1.5h; total 12h (for both parent and child groups)

Table 1 continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Voos (2017)	N=21 parents (71% mothers)	M=9.5 (range NR; <18) 91% boys	Non-clinical	Clinical: ASD	Uncontrolled trial: 1. MP	MP (Bögels & Restifo, 2013)	Parent group	8 weeks x 1.5h; total 12h
Xu (2017)[#]	N=32 parents (90% mothers)	M=4.68 (2.5-5) 71% boys	Non-clinical	Clinical: ASD (48%), ID or other developmental delay (36%), Down's syndrome (16%)	Uncontrolled trial: 1. MBSR	MBSR	Parent group	8 weeks x 2h + 6h retreat; total 22h
Zhang et al. (2017)	N=11 parents (64% mothers) and 11 children	M=9.5 (8-12) 73% boys	Non-clinical	Clinical: ADHD	Uncontrolled trial: 1. MP	MP (van der Oord et al., 2012; van de Weijer-Bergsma et al., 2012)	Parent group and separate child mindfulness group	8 weeks x 1.5h; total 12h (for both parent and child groups)

Note. ^For both parent and youth clinical status, "Clinical" means that the participating parent or their child were selected for the study based on either a clinical diagnosis, or referral for clinical assistance, for a mental health difficulty. "Non-clinical" means the participating parents, or their child, were not selected for the study based on either a clinical diagnosis or referral for clinical assistance. A non-clinical group of parents or youth may still, therefore, include individuals who meet criteria for a psychiatric or physical health condition; NR, Not reported; MBSR, Mindfulness-Based Stress Reduction (Kabat-Zinn et al., 1992); MBCT, Mindfulness-Based Cognitive Therapy (Segal et al., 2002);MP, mindful parenting; WLC, waitlist controlled; RCT, randomized, controlled trial; ASD, an autism spectrum disorder; ID, an intellectual disability; DD, a depressive disorder; PTSD, post-traumatic stress disorder; ADHD, attention deficit/hyperactivity disorder; PDD, pervasive developmental disorder; ODD, oppositional defiant disorder; CD, conduct disorder; BD, bipolar disorder; BPD, borderline personality disorder; AD, anxiety disorder; LD, learning disorder; OCD, obsessive compulsive disorder; MD, mood disorder; IED, intermittent explosive disorder; DICA, disorder of infancy, childhood or adolescence not otherwise specified; VABS, Vineland Adaptive Behavior Scales (Sparrow et al., 1984); [#]Chan & Neece (2018), Lewallen & Neece (2015), and Xu (2017) are included in this table for clarity, however these three studies appear to utilize samples of participants overlapping with Neece (2014); [a]Potharst et al. (2018a) included two separate streams of participants. One stream attended the intervention in non-clinical settings, the other attended in clinical settings. Study characteristics are reported separately for each setting, given they were independent from each other; [b]basic non-clinical program was 8 weeks x 2h. However, there were 4 locations (A, B, C, and D) and some varied the basic program. B ran 2.5h sessions, D ran 3h sessions, and B and D offered a follow-up session; [c]basic clinical program was 8 weeks x 3h + 3h booster. This was run at 4 locations (E, F, G, and H). Location E adjusted the session length to 2.5h.

Table 2

Reported results of mindfulness intervention, for parenting stress

Study	Parenting stress measure[#]	Within group results		Between group results	
		Pre-Post	Pre-Follow up^	Pre-Post	Pre-Follow up^
Bazzano et al. (2015)	PSS	NR[a](+)	NR[a](+)		
Bögels et al. (2014)	PSI, Competence scale	*d*=0.44 (+)	*d*=0.47(+)		
Chaplin et al. (2018)	SIPA subscales:				
	Parent Life Restrictions			*d*=0.53(+)	
	Parent Incompetence/Guilt			*d*=-0.14	
	Relationship with Partner			*d*=0.59(+)	
Corthorn (2018)	PSI-SF			NR(+)	*d*=0.66(+)
de Bruin et al. (2015)	PSI	*d*=0.21(+)	*d*=-0.01		
Eames et al. (2015)	PSI-SF	*g*=0.81[b]			
Ferraioli & Harris (2013)	PSI-SF	*d*=2.03(+)	*d*=1.01	*d*=1.59(+)	*d*=0.63
Haydicky et al. (2015)	SIPA	NR	*d*=0.81(+)		
Jones et al. (2018)	QRS-PFP	*d*=-0.12			
Lo et al. (2017a)	PSI-SF			*d*=0.34(+)	
Lo et al. (2017b)	PSI-SF			*d*=0.19(+)	
	HRV Low frequency[c]			*d*=0.00	
Maloney & Altmaier (2007)	PSI-SF	*d*=0.26			
Mann et al. (2016)	PSI-SF			*d*=0.40 (4 mo.)	*d*=0.40 (9 mo.)
Neece (2014)	PSI-SF, Parental Distress scale	*d*=0.70(+)[d]		*d*=0.70(+)	
Potharst et al. (2017)	PSI, modified version	*d*=0.25	*d*=0.44(+); *d*=0.53(+) (1 yr.)		
Potharst et al. (2018a)	OBVL	*d*=0.37(+)	*d*=0.67(+)		
Ridderinkhof et al. (2017)	PSI, Competence scale	*d*=0.21(+)	*d*=0.39(+); *d*=0.28(+) (1 yr.)		
Short et al. (2017)	PSI-SF	*d*=0.04			
van de Weijer-Bergsma et al. (2012)	PSI-SF	*d*=-0.50[M]; *d*=0.70[F](+)	*d*=-0.20[M]; *d*=1.1[F](+)		
van der Oord et al. (2012)	PSI-SF	NR (ns)	*d*=0.57(+)		
Voos (2017)	PSI	NR	*d*=0.94(+)		
Zhang et al. (2017)	PSI-SF	*d*=-0.18(+)			

Note. [#] = all parenting stress effects are based upon the reports of the parent/s who attended the intervention, and therefore combine mother and father reports, except in the case of van de Weijer-Bergsma et al. (2012) which reports mother and father results separately; ^ = 8 week follow up, unless otherwise indicated; (+) indicates effect size is significant (as reported by the relevant study author/s), $p < .05$. For within-group results, effect size is reported as a

positive number if there was improvement in the outcome, and as a negative number if there was a deterioration. For between-group results, effect size is reported as a positive number if the outcome improved more in the mindfulness group than the control group; NR = not reported; ns = not significant; [a] = *d* not reported, but % change reported as significant; [b] *g* = Hedges' glass; [c] = only low frequency heart rate variability (HRV) is included, as the effect for high frequency HRV was reported only as non-significant; [d] = the within-group parenting stress effect is reported in Xu (2017); [M] = mother; [F] = father; PSS = Parental Stress Scale (Berry & Jones, 1995); PSI = Parenting Stress Index (Abidin, 1983); PSI-SF = Parenting Stress Index, Short Form (Abidin, 1995); SIPA = Stress Index for Parents of Adolescents (Sheras et al., 1998); QRS-PFP = Questionnaire on Resources and Stress Short Form – Parent and Family Problems subscale (Friedrich et al., 1983); OBVL = Opvoedingsbelastingvragenlijst (Veerman et al., 2014), a Dutch parenting stress questionnaire.

Table 3

Reported results of mindfulness intervention, for youth psychological outcomes

Study	Outcomes	Measure	Reporter	Within group results		Between group results (pre-post)
				Pre-post	Pre-follow up^	
Bögels et al. (2008)	Mindfulness	MAAS	Youth	*d*=0.50(+)	*d*=0.50(+)	
	Internalizing outcomes:					
	Internalizing problems	YSR	Youth	*d*=0.50	*d*=0.50	
		CBCL	Parent	*d*=-0.10	*d*=0.30	
	Happiness	SHS	Youth	*d*=0.60(+)	*d*=0.60(+)	
	Externalising outcomes:					
	Externalizing problems	YSR	Youth	*d*=1.10(+)	*d*=1.20(+)	
		CBCL	Parent	*d*=0.30	*d*=0.40	
	Self-control	SCRS	Youth	*d*=0.80(+)	*d*=0.60(+)	
	Cognitive outcomes:					
	Thought problems	YSR	Youth	*d*=0.40	*d*=0.30	
		CBCL	Parent	*d*=0.00	*d*=0.10	
	Attention problems	YSR	Youth	*d*=1.00(+)	*d*=0.90(+)	
		CBCL	Parent	*d*=0.30	*d*=0.50	
	Sustained attention	D2 Test of Attention	Youth	*d*=0.60(+)	*d*=1.10(+)	
	Social outcomes:					
	Social problems	YSR	Youth	*d*=0.60(+)	*d*=0.50(+)	
		CBCL	Parent	*d*=0.20	*d*=0.30	
	Social behavior	CSBQ	Parent	*d*=-0.10	*d*=0.40	
Bögels et al. (2014)	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent	*d*=0.45(+)	*d*=0.47(+)	
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent	*d*=0.31(+)	*d*=0.37(+)	
de Bruin et al. (2015)	Mindfulness	MAAS - A	Youth	*d*=-0.26	*d*=-0.02	
	Internalizing outcomes:					
	Worry	PSWQ	Youth	*d*=-0.04	*d*=0.28	
	Rumination	RRS	Youth	*d*=0.34	*d*=0.92 (+)	
	Well-being	WHO-5	Youth	*d*=0.55(+)	*d*=0.63(+)	
	Externalizing outcomes:					
	Autism core symptoms	AQ	Youth	*d*=-0.04	*d*=0.06	
			Parent	*d*=0.09	*d*=-0.15	
	Social outcomes:					
	Social responsiveness	SRS	Parent	*d*=-0.01	*d*=0.33	

53 *Table 3 continued*

Study	Outcomes	Measure	Reporter	Within group results		Between group results (pre-post)
				Pre-post	Pre-follow up^	
Haydicky et al. (2015)[a]	Internalizing outcomes:					
	Internalizing problems	RCADS	Youth	*d*=0.26	*d*=1.01(+)	
			Parent	NR	*d*=0.49	
	Anxiety	RCADS	Youth	*d*=0.25	*d*=1.02(+)	
			Parent	NR	*d*=0.37	
	Depression	RCADS	Youth	*d*=0.38	*d*=0.64(+)	
			Parent	NR	*d*=0.55	
	Externalizing outcomes:					
	ODD	Conners	Youth	*d*=-0.45	*d*=0.21	
			Parent	NR	*d*=0.45	
	CD	Conners	Youth	NR	*d*=0.46	
			Parent	*d*=0.70(+)	*d*=0.32	
	Hyperactivity/ impulsivity	Conners	Youth	NR	*d*=0.16	
			Parent	NR	*d*=0.41	
	Cognitive outcomes:					
	Inattention	Conners	Youth	NR	*d*=0.12	
			Parent	*d*=0.62	*d*=0.20	
	Learning problems	Conners	Youth	NR	*d*=-0.64	
			Parent	*d*=0.46	*d*=0.29	
	Executive function	Conners	Parent	*d*=0.36	*d*=0.24	
	Social outcomes:					
	Peer relations	Conners	Parent	*d*=1.07(+)	*d*=0.02	
	Family relations	Conners	Youth	*d*=-0.34	*d*=0.31	
Jones et al. (2018)	Externalizing outcomes:					
	Behavior problems	SDQ	Parent	*d*=-0.14		
	Social outcomes:					
	Prosocial behavior	SDQ	Parent	*d*=0.04		
Lo et al. (2017a)	Externalizing outcomes:					
	Behavior problems	ECBI	Parent			NR (ns)
	Behavior severity	ECBI	Parent			NR (ns)
Lo et al. (2017b)	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent			*d*=0.46(+)
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent			*d*=0.29(+)
	ADHD symptoms	SWAN	Parent			*d*=0.63(+)
	Executive function[b]	CANT Conflict monitoring	Youth			*d*=0.41(+)

Table 3 continued

Study	Outcomes	Measure	Reporter	Within group results		Between group results (pre-post)
				Pre-post	Pre-follow up^	
Mann et al. (2016)	Externalizing outcomes:					
	Behavior problems	SDQ	Parent			*d*=0.60(+) (4 mo.)
Meppelink et al. (2016)	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent	*d*=0.34(+)	*d*=0.31(+)	
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent	*d*=0.22(+)	*d*=0.37(+)	
	Cognitive outcomes:					
	Attention problems	CBCL	Parent	*d*=0.26(+)	*d*=0.42(+)	
Neece (2014) [including Lewallen & Neece (2015); Chan & Neece (2018); Xu (2017)]	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent			*d*=-0.13
	Emotional reactivity	CBCL	Parent			*d*=-0.31
	Anxious/depressed	CBCL	Parent			*d*=-0.25
	Somatic complaints	CBCL	Parent			*d*=0.24
	Withdrawn/depressed	CBCL	Parent			*d*=-0.04
	Sleep problems	CBCL	Parent			*d*=0.28
	DSM Affective problems	CBCL	Parent			*d*=0.57
	DSM Anxiety problems	CBCL	Parent			*d*=-0.20
	Emotion dysregulation[c]	DCS	Observer	*β*=0.27, sr^2=0.06		
	Emotion regulation[d]	ERC	Parent	*d*=0.12		
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent			*d*=0.45
	Aggressive behavior	CBCL	Parent			*d*=0.30
	DSM ADHD problems	CBCL	Parent			*d*=0.85(+)
	DSM ODD	CBCL	Parent			*d*=0.20
	Cognitive outcomes:					
	Attention problems	CBCL	Parent			*d*=0.71
	DSM Developmental problems	CBCL	Parent			*d*=0.17
	Social outcomes[e]:	SSIS				
	Self-control		Parent	*d*=0.54(+)		
			Secondary Informant	*d*=0.36(+)		
			Teacher	*d*=0.59(+)		

57 *Table 3 continued*

Study	Outcomes	Measure	Reporter	Within group results		Between group results (pre-post)
				Pre-post	Pre-follow up^	
Neece et al. (2014) continued	Communication		Parent	*d*=0.03		
			Secondary Informant	*d*=0.10		
			Teacher	*d*=0.75(+)		
	Cooperation		Parent	*d*=-0.03		
			Secondary Informant	*d*=0.12		
			Teacher	*d*=0.83(+)		
	Assertion		Parent	*d*=-0.24		
			Secondary Informant	*d*=0.74(+)		
			Teacher	*d*=0.48(+)		
	Responsibility		Parent	*d*=0.18		
			Secondary Informant	*d*=0.19		
			Teacher	*d*=0.58(+)		
	Empathy		Parent	*d*=0.61(+)		
			Secondary Informant	*d*=0.27		
			Teacher	*d*=0.58(+)		
	Engagement		Parent	*d*=0.61(+)		
			Secondary Informant	*d*=0.19		
			Teacher	*d*=0.82(+)		
Potharst et al. (2017)	Internalizing outcomes:					
	Positive affect	IBQ-R	Parent	*d*=0.48(+)	*d*=0.51(+)	
	Regulating	IBQ-R	Parent	*d*=0.35	*d*=0.06	
	Negative emotionality	IBQ-R	Parent	*d*=0.25	*d*=0.19	
Potharst et al. (2018a)	Internalizing outcomes:					
	Well-being	WHO-5	Parent	*d*=0.30(+)	*d*=0.11	
	Externalizing outcomes:					
	Behavior problems	SDQ	Parent	*d*=0.61(+)	*d*=0.41(+)	
Racey et al. (2017)	Internalizing outcomes:					
	Depression	BDI-II	Youth	NR(+)[f]		
	Rumination	RRS	Youth	NR(+)[f]		
	Self-compassion	SCS	Youth	NR(+)[f]		
	De-centring	EQD	Youth	NR(+)[f]		

58

59 *Table 3 continued*

Study	Outcomes	Measure	Reporter	*Within group results*		*Between group results (pre-post)*
				Pre-post	*Pre- follow up^*	
Ridderinkhof et al. (2017)	Mindfulness	CAMM[g]	Youth	*d*=0.02	*d*=0.37; *d*=0.01 (1 yr.)	
	Internalizing outcomes:					
	Internalizing problems	YSR[g]	Youth	*d*=0.13	*d*=0.50; *d*=0.59 (1 yr.)	
		CBCL	Parent	*d*=0.35(+)	*d*=0.38(+); *d*=0.63(+) (1 yr.)	
	Rumination	RRS[g]	Youth	*d*=0.44(+)	*d*=0.71(+); *d*=-0.27 (1 yr.)	
	Stress	CSQ-CA	Youth	*d*=0.20	*d*=0.63(+); *d*=0.25 (1 yr.)	
	Sleep problems	CSRQ	Youth	*d*=0.06	*d*=0.28; *d*=0.12 (1 yr.)	
	Well-being	WHO-5	Youth	*d*=0.35	*d*=0.40; *d*=0.46(+) (1 yr.)	
	Externalizing outcomes:					
	Externalizing problems	YSR[g]	Youth	*d*=0.20	*d*=0.56(+); *d*=0.61(+) (1 yr.)	
		CBCL	Parent	d=0.21(+)	d=0.43(+); d=0.42(+) (1 yr.)	
	Cognitive outcomes:					
	Attention problems	YSR[g]	Youth	*d*=0.22	*d*=0.57(+); *d*=0.68(+) (1 yr.)	
		CBCL	Parent	*d*=0.32(+)	*d*=0.44(+); *d*=0.58(+) (1 yr.)	
	Social outcomes:					
	Social responsiveness	SRS	Parent	*d*=0.32(+)	*d*=0.33(+); *d*=0.51(+) (1 yr.)	
van der Oord et al. (2012)	Externalizing outcomes:					
	Inattention	DBDRS	Parent	*d*=0.80(+)	*d*=0.80(+)	
			Teacher	NR (ns)	NR (ns)	
	Hyperactivity	DBDRS	Parent	*d*=0.56(+)	*d*=0.59(+)	
			Teacher	NR (ns)	NR (ns)	
	ODD	DBDRS	Parent	NR (ns)	NR (ns)	
			Teacher	NR (ns)	NR (ns)	

60

61 *Table 3 continued*

Study	Outcomes	Measure	Reporter	Within group results		Between group results (pre-post)
				Pre-post	Pre-follow up^	
van de Weijer-Bergsma et al. (2012)	Mindfulness	MAAS	Youth	*d*=0.10	*d*=-0.10; *d*=0.50 (16 wks.)	
	Internalizing outcomes:					
	Internalizing problems	YSR	Youth	*d*=0.10	*d*=0.20; *d*=0.70 (16 wks.)	
		CBCL	Mother	*d*=0.10	*d*=0.00	
			Father	*d*=0.40	*d*=0.50	
			Teacher	*d*=0.20		
	Fatigue	FFS	Youth	*d*=0.00	*d*=0.20; *d*=-0.10 (16 wks.)	
	Happiness	SHS	Youth	*d*=-0.50	*d*=-0.40; *d*=-0.20 (16 wks.)	
	Externalizing outcomes:					
	Externalizing problems	YSR	Youth	*d*=-0.10	*d*=0.50; *d*=0.90 (16 wks.)	
		CBCL	Mother	*d*=-0.21	*d*=0.10	
			Father	*d*=0.20(+)	*d*=0.30(+)	
			Teacher	*d*=0.20		
	Cognitive outcomes:					
	Attention problems	YSR	Youth	*d*=0.50	*d*=0.90(+); *d*=1.0 (16 wks.)	
		CBCL	Mother	*d*=0.10	*d*=0.30	
			Father	*d*=0.60	*d*=1.50(+)	
			Teacher	*d*=0.30		
	Metacognitive problems	BRIEF	Mother	*d*=-0.30	*d*=0.00	
			Father	*d*=1.00	*d*=1.80(+)	
			Teacher	*d*=0.20		
	Behavior regulation problems	BRIEF	Mother	*d*=-0.20	*d*=0.10	
			Father	*d*=0.10	*d*=0.60(+)	
			Teacher	*d*=-0.50		
	Reaction time	ANT	Youth	*d*=-0.20	*d*=-0.10; *d*=-0.70 (16 wks.)	
	Sustained attention[h]	ANT	Youth	*d*=0.20 to *d*=0.40	*d*=0.80(+); *d*=0.40 to *d*=0.50 (16 wks.)	
	Impulsivity[i]	ANT	Youth	*d*=0.00 to *d*=0.50(+)	*d*=0.30 to *d*=0.70; *d*=0.10 to *d*=0.70 (16 wks.)	

62

Table 3 continued

Study	Outcomes	Measure	Reporter	Within group results		Between group results (pre-post)
				Pre-post	Pre-follow up^	
Zhang et al. (2017)	Externalizing outcomes:					
	Behavior problems	ECBI	Parent	*d*=0.25		
	Behavior severity	ECBI	Parent	*d*=0.36(+)		
	Cognitive outcomes:					
	Metacognitive problems	BRIEF	Parent	*d*=0.00		
	Behavior regulation problems	BRIEF	Parent	*d*=0.01		
	Sustained attention[j]	Tea-CH	Youth	*d*=-0.24 to *d*=0.76		
	Selective/focussed attention[k]	Tea-CH	Youth	*d*=0.80 to *d*=1.53(+)		
	Attentional control/switching[l]	Tea-CH	Youth	*d*=-0.16 to *d*=0.81		
	Inattention[m]	CCPT	Youth	*d*=-0.43 to *d*=2.29(+)		
	Impulsivity[n]	CCPT	Youth	*d*=-0.73 to *d*=0.81		
	Vigilance[o]	CCPT	Youth	*d*=-0.13		
	Sustained attention[p]	CCPT	Youth	*d*=0.28		

Note. For within-group results, effect size is reported as a positive number if there was an improvement in the outcome, and as a negative number if there was a deterioration. For between-group results, effect size is reported as a positive number if the outcome improved more in the mindfulness group than the control group; + indicates effect size is significant, $p < .05$; ^, 8 week follow up, unless otherwise indicated; NR, not reported by study authors; ns, not significant; [a] the follow-up effects reported by Haydicky et al. (2015) are post-follow up; [b] only the conflict monitoring effect is included, as effects for alerting, orienting, response time and accuracy were reported only as non-significant; [c] Emotion dysregulation effect is reported in Chan & Neece (2018); [d] Emotion regulation is reported in Xu (2017); [e] Social skills are reported in Lewallen & Neece (2015); [f] *d* not reported, but mean change reported as significant; [g] these measures were only completed by adolescents ≥ 11yrs; [h] Sustained attention measured by "misses" measures of Amsterdam Neuropsychological Tasks (ANT; De Sonneville, 1999); [i] Impulsivity measured by "false alarms" measures of ANT; [j] Sustained attention measured by Score!, Sky Search DT, Walk Do Not Walk, and Code Transmission subtests of the Test of Everyday Attention for Children (Tea-CH; Manly et al., 2001); [k] Selective/focussed attention measured by Sky Search and Map Mission subtests of Tea-CH; [l] Attentional control/switching measured by Creature Counting and Opposite Worlds subtests of Tea-CH; [m] Inattention measured by detectability, omissions, commissions, Hit reaction time (HRT) statistics and variability measures in Conners' Continuous Performance Test, 3rd edition (CCPT; Conners, 2015); [n] Impulsivity measured by commissions, perseverations and HRT measures of CCPT; [o] Vigilance measured by HRT block change measure of CCPT; [p] Sustained attention measured by HRT block change measure of CCPT; MAAS, Mindful Attention and Awareness Scale (Brown & Ryan, 2003); YSR, Youth Self-Report

(Achenbach, 1991a); CBCL, Child Behavior Checklist (Achenbach, 1991b); SHS, Subjective Happiness Scale (Lyubomirsky & Lepper, 1999); SCRS, Self-Control Rating Scale (Kendall, 1979); CSBQ, Children's Social Behavior Questionnaire (Luteijn et al., 2000); MAAS-A, Mindful Attention and Awareness Scale – Adolescent (Brown et al., 2011); PSWQ, Penn State Worry Questionnaire (Meyer et al., 1990); Ruminative Response Scale (Nolen-Hoeksema, 2000); WHO-5, World Health Organisation-Five Wellbeing Index (Bech et al., 2003); SRS, Social Responsiveness Scale (Constantino & Gruber, 2005); AQ, Autism Questionnaire (Auyeung et al., 2008); RCADS, Revised Child Anxiety and Depression Scale (Chorpita et al., 2000); Conners, Conners 3rd Edition (Conners, 2008); SDQ, Strengths and Difficulties Questionnaire (Goodman, 1997); ECBI, Eyberg Child Behavior Inventory (Robinson et al., 1980); SWAN, Strengths and Weaknesses of ADHD Symptoms and Normal Behaviors Rating Scale (Swanson et al., 2012); CANT, Child Attention Network Test (Posner and Peterson, 1990); DCS, Dysregulation Coding System (Hoffman et al., 2006); ERC, Emotion Regulation Checklist (Shields & Cicchetti, 1997); SSIS, Social Skills Improvement System (Gresham & Elliott, 2008); IBQ-R, Infant Behavior Questionnaire-Revised, Very Short Form (Putnam et al., 2014); BDI-II, Beck Depression Inventory (Beck et al., 1996); SCS, Self-Compassion Scale (Neff, 2015); EQD, Experiences Questionnaire (Fresco et al., 2007), Decentring subscale; CAMM, Children's Acceptance and Awareness Measure (de Bruin et al., 2013); CSQ-CA, Chronic Stress Questionnaire for Children and Adolescents (De Bruin et al., 2017); CSRQ, Chronic Sleep Reduction Questionnaire (Meijer, 2008); DBDRS, Disruptive Behavior Disorder Rating Scale (Pelham et al., 1992); FFS, Flinders Fatigue Scale (Gradisar et al., 2007); BRIEF, Behavior Rating Inventory of Executive Function (Goia et al., 2000).

Data Analysis

The meta-analysis was conducted using the Comprehensive Meta-Analysis program, version 3.0 (CMA). Two types of summary effect were calculated, using means and standard deviations whenever these were available, and statistics such as *t* and *p* when they were not. For studies reporting pre- and post-intervention outcome data, we calculated Hedges' *g* within-group effect sizes. For studies comparing outcomes of mindfulness and control groups, we calculated Hedges' *g* between-group differences in effect size. Hedges' *g* is a weighted mean effect size that corrects for potential bias due to small sample sizes (Hedges & Olkin, 1985). Cohen's guidelines that an effect size of 0.20 is small, 0.50 is moderate and 0.80 is large (Cohen, 1988) may be applied to both Cohen's *d* and Hedges' *g* effect sizes. For all analyses, a correlation of $r = 0.70$ was assumed between pre- and post-intervention measures (Rosenthal, 1993). Random-effects models were used for main effects analyses, to reflect the assumption that the true effect size would vary from study to study because study participants were drawn from different populations. Each summary effect reported in this paper is therefore an estimate of the mean of a distribution of true effects (Borenstein et al., 2009). Heterogeneity amongst studies in each main-effect analysis was assessed using the *Q* and I^2 statistics. *Q* reflects the distance of each study from the summary effect. A significant *Q*-statistic indicates variance in true effects, rather than variance due only to random sampling error (Borenstein et al., 2009). I^2 reflects the proportion of observed variance in effects that is due to heterogeneity, or variance in true effects (Higgins et al., 2003). Higgins et al. suggest that I^2 values of 25, 50 and 75% indicate low, moderate and high heterogeneity respectively.

Several methodological issues arose in connection with the calculation of the summary effect size for parenting stress. All studies except one reported either a total parenting stress score or the score from a single parenting stress subscale. A parenting stress

effect size was therefore calculated for each of these studies, using the single reported outcome score. However, Chaplin et el. (2018) reported separate data for three subscales of the Stress Index for Parents of Adolescents (SIPA; Sheras et al., 1998). Rather than including each of these three subscales as independent effects in the meta-analysis, the procedure described by Borenstein et al. (2009) was followed to create a single, composite effect for this study. Using a single effect ensures that additional weight is not given to this study, as would be the case if the subscales were treated as independent of each other. It also ensures that the precision of the summary effect is not over-estimated due to the positive correlations between each subscale (Borenstein et al., 2009). Under this procedure, the effects for each subscale were averaged to give a composite parenting stress effect size. To calculate the variance of the composite effect, a correlation between the subscales of $r = 0.55$ was used, based on the reported correlations between the three relevant subscales of $r = 0.52$ to 0.57 (Sheras et al., 1998). A similar issue arose in relation to the parenting stress reporter. Although the majority of studies presented data for a single parenting stress reporter, van de Weijer-Bergsma et al. (2012) reported separate data for mothers and fathers. As mothers and fathers were reporting their levels of stress in respect of the same adolescent, the mother and father effects were not independent. Accordingly, a composite mother/father effect size was calculated following the procedure described above, using a correlation between the two outcomes of $r = 0.60$. This r-value was chosen using the correlations between mother- and father-reports of child anxiety ($r = 0.68$) and parental rearing (rs between 0.39 and 0.49) reported in Bögels and van Melick (2004), as a guide. Finally, Potharst et al. (2018a) reported data separately for parents participating in clinical and non-clinical settings. The effects reported for these two settings have been included separately in all analyses, as if they were data from two separate studies, because they are based on reports from independent groups of parents participating in independent settings.

Due to the limited number of studies reporting on specific youth psychological outcomes, a detailed quantitative analysis was not conducted in respect of each youth outcome covered by the reviewed studies. Instead, specific outcomes were grouped into internalizing, externalizing, cognitive and social domains, as the reported outcomes all fell within one of these four domains of functioning. In addition, to provide a large enough pool of effects for moderator analyses to be conducted, a new "overall youth outcomes" variable was created. This variable was created by first calculating effect sizes for youth outcomes reported by parents and then calculating a single, composite parent-reported effect size for each study using the Borenstein et al. (2009) procedure described above, assuming a correlation between the outcomes within each study of $r = 0.60$. In studies reporting a broadband scale for youth outcomes (for example, "Internalizing problems"), the effect for the broadband scale was used in the calculation of the overall youth outcomes summary effect size. Where a study also reported data for the specific scales making up that broadband scale, specific scale effects were not included. In studies where no broadband scale was used, but more than one youth psychological outcome was reported (for example, anxiety and depression), then these were combined to form a composite effect. For studies reporting data for only one relevant youth outcome, then the effect size for that outcome was used for that study. For the two studies that reported separate youth outcome data for two parents or a parent and another family caregiver (van de Weijer-Bergsma et al., 2012 and Lewallen & Neece, 2015), a composite parent-reported effect size was calculated using a correlation of $r = 0.60$ between the two parent or caregiver outcomes. The same two studies also included data from tutor reports on some outcomes. However, for consistency with the other studies, the tutor-reported data was not included in the calculation of the youth outcomes effect for those two studies. Data from youth-reported and objective tests of youth outcomes were also not used, as most studies did not include these data. The single youth outcome effect size for

each study was then combined with the others to generate a summary, parent-reported overall youth outcome effect size.

Exploratory moderator analyses were conducted in relation to both parenting stress and overall youth outcomes. For potential categorical moderators, a mixed effects model was used (random-effects within subgroups and fixed-effects across subgroups). The variance of true effect sizes across studies (T^2) was estimated by pooling within-group estimates of T^2 for each subgroup and applying the common estimate to all studies. This method of estimating T^2 is recommended by Borenstein et al. (2009) to increase the accuracy of the estimate, when the number of studies within any subgroup is low. Categorical moderators were tested only when there were four or more studies per subgroup (Fu et al., 2011). To test significance, the Q statistic was calculated between subgroups (Q_B). Random-effects meta-regression analyses were used to investigate the relationship between parent or youth outcomes and potential continuous moderators.

Risk of Bias in Individual Studies

A risk of bias assessment was conducted for each included study. Bias is defined as the tendency for study results to vary from those that would have been obtained from a well-designed and run RCT on the same participant group (Sterne et al., 2016). The domains assessed for potential bias were confounding (for non-randomised studies only), selection, misclassification, performance, attrition, detection and reporting bias. For RCTs, the Cochrane Risk of Bias tool for Randomised Controlled Trials (Higgins et al., 2011) was used to assess selection bias. However, for all other domains, the Cochrane Risk of Bias in Non-randomised Studies of Interventions (ROBINS-I) tool (Sterne et al., 2016) was used, as that tool appeared more suited to assessing studies of psychological interventions where blinding of participants, researchers and outcome assessments are not possible. For the non-randomised studies, the ROBINS-I tool was used to assess all domains. All included studies

were assessed for potential bias independently by both the first author and the graduate student who assisted with study selection. There was 94% agreement in bias ratings, with differences resolved by discussion.

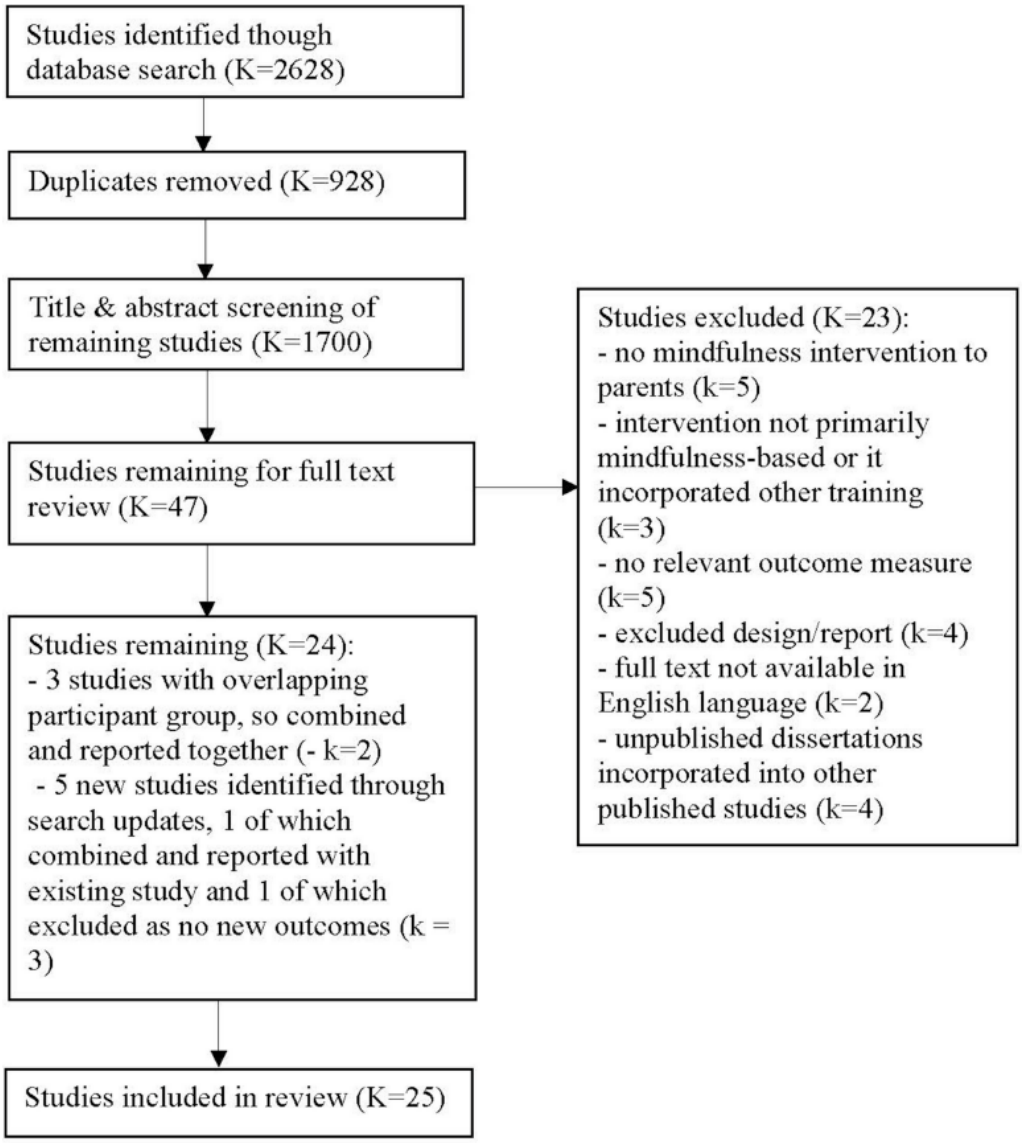
Results

Study Selection

Figure 1 shows the process of study selection and exclusion. The database searches identified 2,628 studies, 928 of which were duplicates. Forty-seven studies were retained after the title and abstract screening. Twenty-three of these studies were excluded based on the full text review, for the reasons set out in Figure 1. Of the 24 retained studies, three studies (Neece, 2014; Lewallen & Neece, 2015; Xu, 2017) appeared to be reporting data from an overlapping participant group. Confirmation was sought by email from the corresponding author but was not received. Lewallen and Neece (2015) and Xu (2017) reported on relevant outcomes that were not included in Neece (2014), but the outcome data for these two studies are reported in Table 3 under Neece (2014), to reflect the apparent non-independence of the outcomes reported in these two studies. When the initial search conducted in August 2018 was updated in October 2018, five additional studies were identified by the first author. Two of these, Chan and Neece (2018) and Neece et al. (2018), also appeared to report data from a group of participants overlapping with those used in Neece (2014). As these two new studies and Neece (2014) all reported on parenting stress, the parenting stress outcomes from Chan and Neece (2018) and Neece et al. (2018) were not included in this review. The child outcome reported by Chan and Neece (2018) was not included in Neece (2014), so this child outcome is reported in Table 3, also under Neece (2014). However, the child outcomes reported in Neece et al. (2018) were also reported in Neece (2014), so this study was not included in this review. Accordingly, 25 independent studies are included in this review.

Figure 1

Flow diagram showing process of study selection



Study Characteristics

Twenty-five independent studies reported on the effects of a mindfulness intervention for parents. Eighteen studies delivered mindful parenting interventions, five studies delivered MBSR or Mindfulness-based Cognitive Therapy (MBCT) interventions specifically adapted for parents, and four studies (which appeared to use overlapping participant groups) delivered

MBSR to parents. Where adaptations were made to standard MBSR or MBCT programs to reflect the fact that the participants were parents, these adaptations were minor. For example, trainers encouraged participants to reflect on how key concepts of mindfulness, such as acceptance and non-reactivity, might apply to their interactions with their children.

All studies delivered the intervention in a group format. Sixteen studies delivered the intervention to parents (including one mother/infant group), while nine delivered parallel mindfulness training to both parents and their children (parents and children in separate groups). In all studies, the majority of participating parents (between 55 and 100%) were mothers. In relation to parental mental health, four studies involved parents referred for mental health treatment for their own mental health condition or parenting difficulties, while another six studies involved parents identified as being vulnerable to mental health difficulties due to socio-demographic factors or past psychiatric history, or who self-reported experiencing parenting stress. The remaining studies did not report on parental mental health status. In relation to youth mental health, the children of participating parents were identified as having mental health diagnoses or difficulties in 20 of the 25 studies. The mean age of children of participating parents ranged from 0.86 to 16.4 years, and 16 studies involved parents with children whose mean age was <12 years.

Sample sizes ranged from 11 to 180 participants. Of the 25 independent studies, 18 utilized a single group design and seven used a control group. Of the controlled trials, six were RCTs. Two RCTs used an active control group (skills-based parent training and parent education), while the remainder used passive controls such as waitlist or usual care groups. Individual session length ranged from 1.5 h (ten studies) to 3 h (three studies). Eight of the ten studies that delivered parallel parent and child interventions used the shorter 1.5 h sessions. The interventions were delivered over 6–12 weeks, and involved total hours of training between 9 and 27 h.

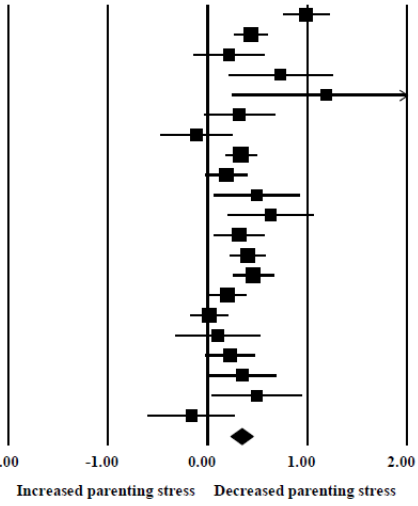
Parenting Stress

Within-Group Differences. Nineteen studies reported data enabling a quantitative analysis of within-group parenting stress. Figure 2 shows the effect sizes for pre- to post-intervention change in parenting stress, with a summary Hedges' $g = 0.34$ ($p < .001$, 95% CI [0.23–0.45]). Heterogeneity was moderate to high ($Q = 66.96$, $p = < .001$, $I^2 = 70\%$). Figure 2 reports composite mother/father data for all studies where mothers and fathers participated. In the one study that reported mother and father outcomes separately, the authors found a significant, moderate to large reduction in parenting stress for fathers and a moderate but insignificant increase for mothers (van de Weijer-Bergsma et al., 2012).

Figure 2

Pre- to post-intervention changes in parenting stress

Study name	Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
Bazzano et al. (2015)	0.987	0.122	0.015	0.748	1.226	8.097	0.000
Bogels et al. (2014)	0.434	0.087	0.008	0.265	0.604	5.012	0.000
Chaplin et al. (2018)	0.215	0.183	0.033	-0.143	0.574	1.176	0.239
Eames et al. (2015)	0.730	0.269	0.072	0.204	1.257	2.719	0.007
Ferraioli & Harris (2013)	1.190	0.486	0.236	0.238	2.143	2.449	0.014
Haydicky et al. (2015)	0.319	0.184	0.034	-0.041	0.679	1.734	0.083
Jones et al. (2018)	-0.114	0.184	0.034	-0.476	0.247	-0.619	0.536
Lo, Chan et al. (2017)	0.333	0.083	0.007	0.171	0.495	4.026	0.000
Lo, Wong et al. (2017)	0.188	0.109	0.012	-0.025	0.402	1.732	0.083
Maloney & Altmaier (2007)	0.493	0.222	0.049	0.057	0.928	2.218	0.027
Mann et al. (2016)	0.631	0.223	0.050	0.195	1.068	2.834	0.005
Potharst et al. (2017)	0.315	0.131	0.017	0.058	0.572	2.400	0.016
Potharst et al. (2018) Non-clinical	0.400	0.093	0.009	0.217	0.583	4.287	0.000
Potharst et al. (2018) Clinical	0.457	0.107	0.012	0.247	0.668	4.258	0.000
Ridderinkhof et al. (2017)	0.196	0.098	0.010	0.004	0.389	2.002	0.045
Short et al. (2017)	0.014	0.100	0.010	-0.181	0.210	0.145	0.885
van de Weijer-Bergsma et al. (2012)	0.102	0.222	0.049	-0.333	0.537	0.460	0.646
van der Oord et al. (2012)	0.222	0.130	0.017	-0.033	0.477	1.708	0.088
Voos (2018)	0.352	0.172	0.030	0.016	0.689	2.051	0.040
Xu (2018)	0.490	0.234	0.055	0.032	0.948	2.097	0.036
Zhang et al. (2017)	-0.162	0.226	0.051	-0.604	0.280	-0.718	0.473
	0.338	0.057	0.003	0.226	0.450	5.906	0.000



At first follow-up, which was generally 2 months post-intervention, the summary effect size for change in parenting stress was $g = 0.53$ ($p < 0.001$, 95% CI [0.45–0.61]) and heterogeneity was low ($Q = 6.62$, $p = .76$, $I^2 = 0\%$). The difference between pre-post and pre-

follow up effect sizes was significant ($Q_B = 7.32$, $df = 1$, $p = .007$). Two studies also reported a 1-year post- intervention follow up. While no quantitative analysis was conducted for this time-point, the reported small to moderate reductions in parenting stress from pre-intervention remained significant [$d = 0.53$ in Potharst et al. (2017) and $d = 0.28$ in Ridderinkhof et al. (2017)].

Moderator analyses were conducted in relation to youth clinical status (clinical vs. non-clinical), youth age (child under 12 years vs. adolescent 12 years and over), and intervention groups (parent only mindfulness group vs. parallel parent and youth mindfulness groups). There were insufficient studies to conduct this analysis in respect of parent clinical status. No significant difference was found between the parenting stress effect sizes for parents attending a mindfulness program based on youth clinical status ($g = 0.33$, $p < .001$, 95% CI [0.19–0.48] for clinical youth and $g = 0.35$, $p < .001$, 95% CI [0.16–0.53] for non-clinical youth; $Q_B = 0.01$, $df = 1$, $p = .906$). Similarly, there was no difference in effects between parents of children ($g = 0.31$, $p < .001$, 95% CI [0.21–0.42]) and adolescents ($g = 0.21$, $p = .005$, 95% CI [0.06–0.35]) ($Q_B = 1.33$, $df = 1$, $p = .248$). However, the effect size for studies using parent-only intervention groups ($g = 0.35$, $p < .001$, 95% CI [0.24–0.46]) was greater than that for studies using parallel intervention groups ($g = 0.18$, $p = .001$, 95% CI [0.07–0.29]) ($Q_B = 4.37$, $df = 1$, $p = .036$). A meta-regression of total intervention hours on parenting stress effect size provided no evidence of a dose-response relationship between total hours spent in the mindfulness intervention and parenting stress ($\beta = 0.01$, $SE = 0.01$, $p = .26$).

Parenting stress was assessed by all studies as an outcome variable rather than as a potential mediator in the relationship between mindfulness in parenting and youth outcomes. One study (Haydicky et al., 2015) examined the direction of relationship between mindful parenting and parenting stress, by using cross-lagged panel correlations. Pre-test mindful

parenting scores were significantly negatively correlated with post-test parenting stress [$r(14) = -0.52$, $p = .02$], but pre-test parenting stress was not significantly correlated with post-test mindful parenting [$r(14) = -0.13$, $p = .311$].

Between-Group Differences. Five studies reported data enabling a comparison of post-intervention differences in parenting stress between mindfulness and control groups. The summary effect for the difference between these two groups indicated that the mindfulness groups experienced larger reductions in parenting stress than the control groups. This difference was of a small to moderate size ($g = 0.44$, $p = .005$, 95% CI [0.13–0.74]), with moderate heterogeneity ($Q = 8.11$, $p = .087$, $I^2 = 51\%$). Of these controlled studies, two compared a mindful parenting intervention with another active intervention. Ferraioli and Harris (2013) reported that mindful parenting resulted in a larger reduction in parenting stress than skills-based parent training ($d = 1.59$). Chaplin et al. (2018) reported that mindful parenting outperformed parent education, in two out of the three parenting stress domains measured ($d = 0.53$ and $d = 0.59$). Although not specifically about parenting stress, one study measured parents' heart rate variability and reported an effect of $d = 0.00$ for the comparison between the mindfulness and control groups (Lo et al., 2017b).

Youth Psychological Outcomes

Within-Group Differences. The summary effect sizes for the youth internalizing, externalizing, cognitive, and social domains are presented in Table 4. Post-intervention effect sizes for each domain were small, and all were maintained at 2-month follow-up.

Table 4

Within-group effects for four youth outcome domains

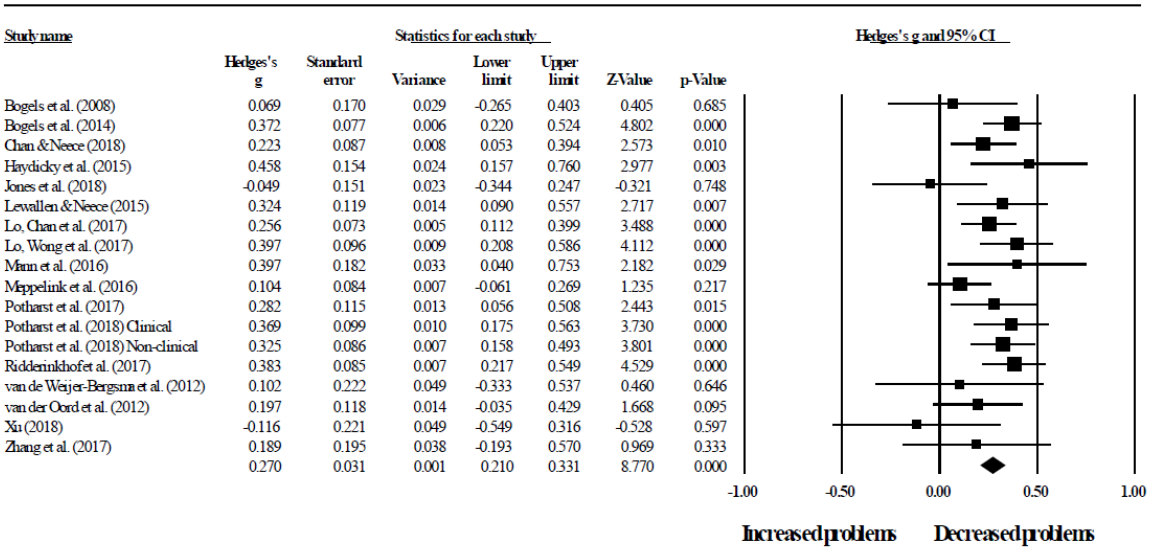
Outcome domain	Point of assessment	Sample		Effect size			Heterogeneity	
		K	*n*	Hedges' *g*	*p*-value	95% CI	I^2	*p*-value
Internalizing	Post-intervention	12	438	0.29	< .001	[0.21, 0.36]	22%	.229
	Follow-up#	9	397	0.33	< .001	[0.22, 0.44]	46%	.065
Externalizing	Post-intervention	14	621	0.26	< .001	[0.18, 0.34]	37%	.079
	Follow-up	10	414	0.39	< .001	[0.31, 0.47]	7%	.379
Cognitive	Post-intervention	7	231	0.27	.001	[0.11, 0.42]	52%	.051
	Follow-up	5	144	0.40	< .001	[0.24, 0.55]	24%	.263
Social^	Post-intervention	5	158	0.28	< .001	[0.14, 0.43]	25%	.254

Note. *K*, number of studies included in the effect size calculation; *n*, total number of participants in the studies included in the relevant domain; #, all follow up assessments are 2 months post-intervention, except for one study included in the Externalizing domain, which conducted follow-up 4 months post-intervention; ^ follow-up data were not analyzed for the Social outcomes domain, as only three studies reported follow-up social outcome data.

Figure 3 shows the effect sizes for overall youth outcomes. The summary effect size was g = 0.27 (p < .001, 95% CI [0.21–0.33]), with low to moderate heterogeneity (Q = 23.06, p = .147, I^2 = 26%). At 2-month follow-up, the summary effect was g = 0.35 (p < .001, 95% CI [0.27–0.42]), with low heterogeneity (Q = 10.45, p = .402, I^2 = 4%). There was no difference between pre-post and pre-follow up effects (Q_B = 2.53, df = 1, p = .112).

Figure 3

Pre- to post-intervention change in overall youth outcomes



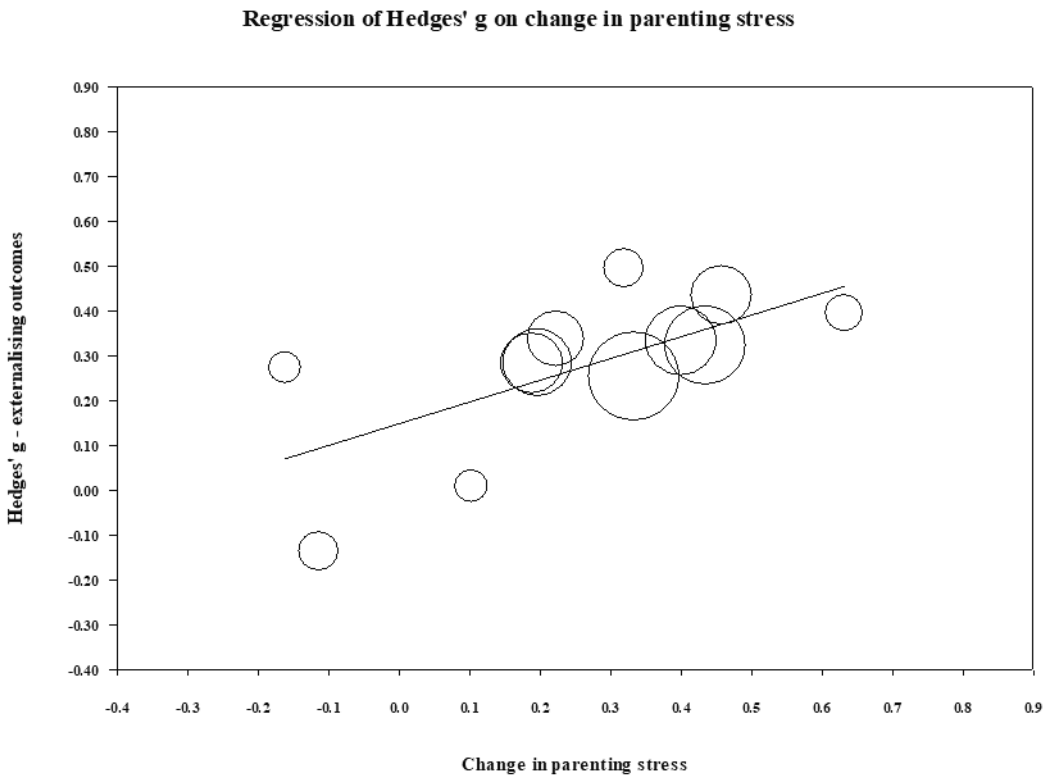
Despite the relatively low level of heterogeneity in youth outcome effects, moderator analyses were conducted in respect of youth age (child vs. adolescent) and intervention groups (parent only vs. parallel parent and youth groups). There were insufficient studies to conduct this analysis in respect of parent or youth clinical status. No differences were found in overall youth outcome effect sizes for children ($g = 0.26$, $p < 0.001$, 95% CI [0.20–0.33]) and adolescents ($g = 0.30$, $p = 0.001$, 95% CI [0.13– 0.48]) ($Q_B = 0.17$, $df = 1$, $p = 0.682$) or for studies using parent only interventions ($g = 0.26$, $p < 0.001$, 95% CI [0.18–0.33]) and studies using parallel parent and youth interventions ($g = 0.31$, $p < 0.001$, 95% CI [0.21–0.41]) ($Q_B = 0.71$, $df = 1$, $p = 0.399$).

A meta-regression of total intervention hours on overall youth outcomes was conducted, but no evidence was found of a relationship between these two variables ($\beta = 0.00$, $SE = 0.00$, $p = 0.844$). For those studies reporting both parenting stress and youth outcome data, a series of meta-regressions were conducted to examine whether change in

parenting stress predicted youth outcome effect sizes. Change in parenting stress predicted change in both youth externalizing (β = 0.48, *SE* = 0.21, *p* = 0.02) and cognitive outcomes (β = 1.13, *SE* = 0.56, *p* = 0.046), but not internalizing outcomes (β = −0.32, *SE* = 0.30, *p* = .282). The same analysis was not performed for the social domain as there were too few studies. Figures 4, 5 show the relationships between change in parenting stress and externalizing outcomes, and change in parenting stress and internalizing outcomes, respectively.

Figure 4

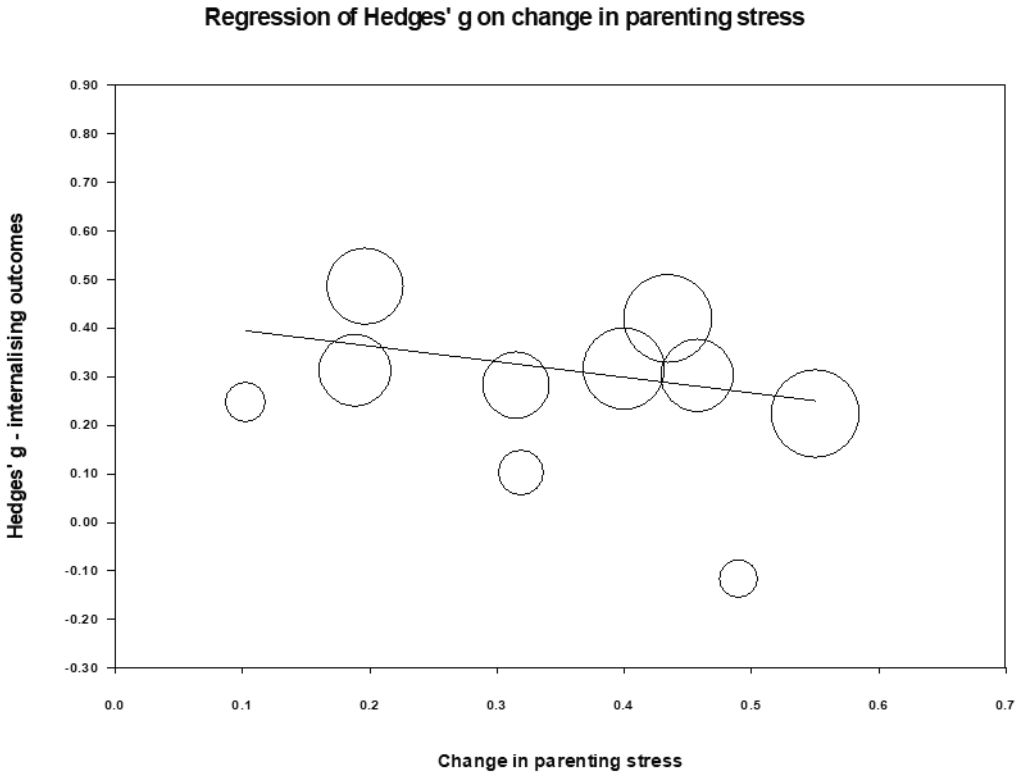
Bubble plot of youth externalizing outcome effects against change in parenting stress



Note. Each bubble represents a study, and the diameter of each bubble is proportional to the study weight

Figure 5

Bubble plot of youth internalizing outcome effects against change in parenting stress



Note. Each bubble represents a study, and the diameter of each bubble is proportional to the study weight

Insufficient data was available for a quantitative analysis of youth mindfulness, but the effects reported by five studies for this variable (see Table 3) ranged from $d = -0.26$ to $d = 0.50$. A small number of studies included objective measures of youth outcomes, such as attention tests. In two studies, the effects obtained in the attention tests were broadly in line with those obtained from self-reports. For example, in Bögels et al. (2008), the youth-reported effect for attention problems was $d = 1.00$, then $d = 0.90$ at follow up, while the effect reported based on the D2 Attention Test was $d = 0.60$, rising to $d = 1.10$ at follow up. Similarly, in van de Weijer-Bergsma et al. (2012), the youth-reported effect for attention problems was $d = 0.50$, while the computerized sustained attention task effects ranged

between $d = 0.20$ and $d = 0.40$. In Zhang et al. (2017), the effects reported for several aspects of attention were variable. For example, the effects in various subtests of sustained attention ranged from $d = -0.24$ to $d = 0.76$.

Only one study reported mother and father data on youth outcomes separately (van de Weijer-Bergsma et al., 2012), and two studies obtained teacher reports of youth outcomes (Lewallen & Neece, 2015, reported in Table 3 under Neece, 2014; van de Weijer-Bergsma et al., 2012). Teacher-reported effects were similar to parent-reported effects in van de Weijer-Bergsma et al. However, in Lewallen and Neece, teachers reported significant improvements in all seven of the social domains measured, whereas parents reported significant improvements in only three domains.

Between-Group Differences. No quantitative comparison of the effectiveness of mindfulness interventions to control groups for youth outcomes was performed, as data required for this analysis was only available for three studies. However, of the studies that reported a between-group effect, the mindfulness group outperformed wait list for externalizing problems in two out of five studies [$d = 0.29$ in Lo et al. (2017b) and $d = 0.60$ in Mann et al. (2016)] and for internalizing problems in one out of three studies [$d = 0.46$ in Lo et al. (2017b)]. There were no studies comparing mindfulness with an active control, for youth psychological outcomes.

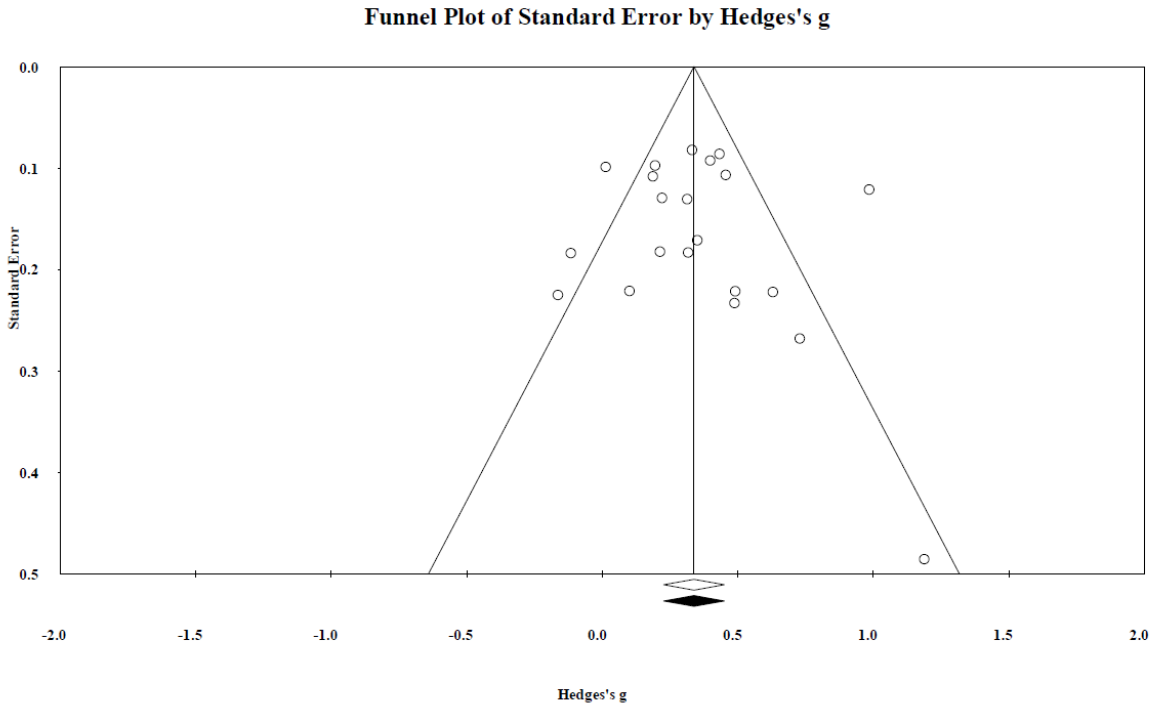
Publication Bias

To assess the impact of any publication bias on the observed effects in this review, the trim and fill method (Duval & Tweedie, 2000) was used to give unbiased estimates of effect size. For within-group parenting stress, the imputed summary effect size was $g = 0.33$, which was equal to the observed summary effect size of $g = 0.33$. As shown in Figure 6, the trim and fill analysis indicated that no studies were required to be trimmed in order for the funnel plot to be symmetric, that is for the impact of any publication bias to be removed. In relation

to between-group parenting stress, the trim and fill analysis produced an imputed summary effect size of $g = 0.32$ (compared to the observed $g = 0.35$), with one study needing to fall on the left of the summary effect for plot symmetry. The impact of any publication bias in relation to parenting stress effects appears likely to be trivial.

Figure 6

Funnel plot of standard error by within-group parenting stress effect sizes

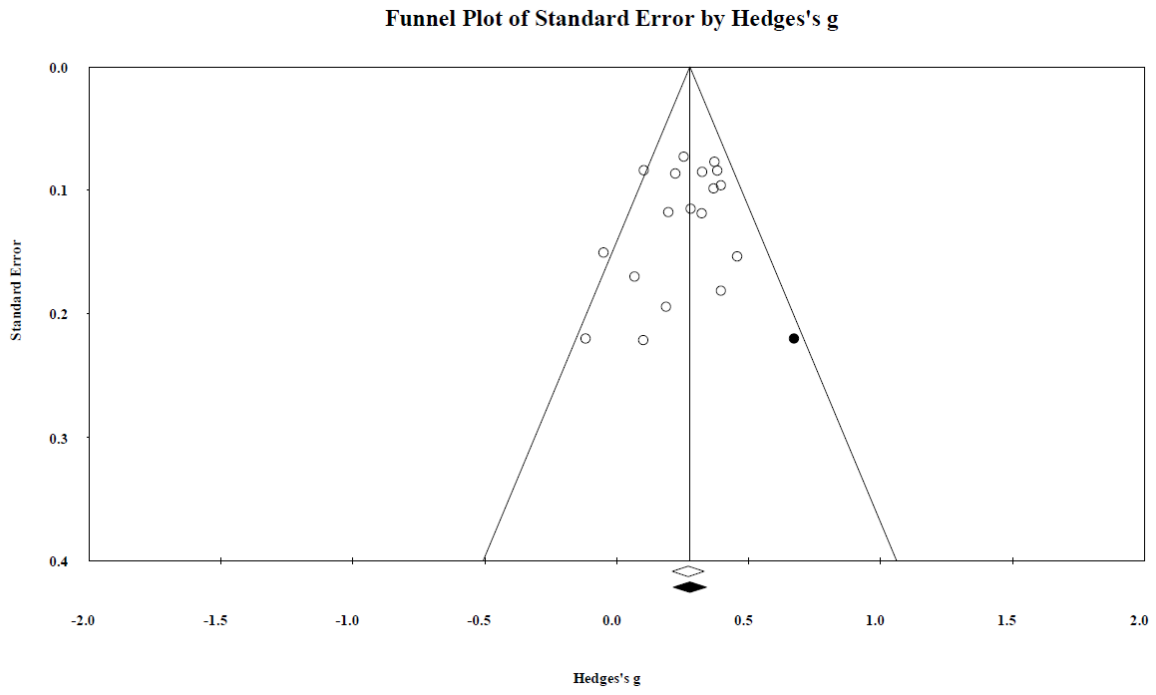


Note. The white diamond represents the observed summary effect size, while the black diamond represents the imputed summary effect size free of publication bias.

For within-group overall youth outcomes, the funnel plot at Figure 7 shows that one study would need to fall on the right side of the observed summary effect for plot symmetry. The imputed effect size was $g = 0.281$ compared to the observed $g = 0.276$), again suggesting a trivial impact of publication bias.

Figure 7

Funnel plot of standard error by within-group overall youth outcomes effect sizes



Note. The black circle represents the effect size of the imputed study that would be required to remove publication bias. The white diamond represents the observed summary effect size, while the black diamond represents the imputed summary effect size free of publication bias.

Assessment of Study Quality

Table 5 contains risk of bias assessments for each reviewed study. Overall, risk of bias was serious. For the non-randomized intervention studies, this was largely driven by the serious risk of confounding bias, which ROBINS-I notes may occur if any prognostic variable also predicts the intervention received by a participant. Due to the lack of randomization, it is considered likely to be an issue for most if not all non-randomized studies (Sterne et al., 2016). For both non-randomized studies and RCTs, the majority of studies were considered at serious risk of detection bias because of the reliance on subjective self- or parent-about-youth outcome reports, which are considered reasonably vulnerable to the influence of knowledge about the intervention. Bias due to potential misclassification was an

444 issue in many studies, as most reports did not state their pre-intervention position as to the
445 minimum number of sessions a participant would need to attend to be considered as having
446 completed the intervention. Bias may be introduced if the minimum number of sessions was
447 changed after the study commenced. Many studies also reported limited information
448 regarding items such as session attendance rates of treatment completers, homework
449 completion and instructor training, making it difficult to properly assess the risk of
450 performance bias.
451

Table 5

Risk of bias assessment for reviewed studies

Study	Confounding bias[a]	Selection bias[b]	Misclassification bias	Performance bias	Attrition bias	Detection bias	Reporting bias
Bazzano et al. (2015)	Serious	Low	Moderate	Unclear	Low	Serious	Moderate
Bögels et al. (2008)	Serious	Low	Moderate	Low	Low	Serious	Moderate
Bögels et al. (2014)	Serious	Low	Moderate	Low	Low	Serious	Moderate
Corthorn (2018)	Serious	Low	Unclear	Unclear	Moderate	Serious	Moderate
Chan & Neece (2018)[#]	-	Low	Unclear	Low	Low	Serious	Moderate
Chaplin et al. (2018)[#]	-	Unclear	Unclear	Unclear	Low	Serious	Moderate
De Bruin et al. (2015)	Serious	Low	Unclear	Low	Low	Serious	Moderate
Eames et al. (2015)	Serious	Low	Low	Unclear	Serious	Serious	Moderate
Ferraioli & Harris (2013)[#]	-	Unclear	Unclear	Low	Moderate	Serious	Moderate
Haydicky et al. (2015)	Serious	Low	Moderate	Low	Moderate	Serious	Moderate
Jones et al. (2017)	Serious	Low	Unclear	Unclear	Moderate	Serious	Moderate
Lewallen & Neece (2015)	Serious	Low	Unclear	Unclear	Moderate	Moderate	Moderate
Lo et al. (2017a)[#]	-	Unclear	Unclear	Low	Low	Serious	Moderate
Lo et al. (2017b)[#]	-	Low	Unclear	Low	Low	Moderate	Low
Maloney & Altmaier (2007)	Serious	Low	Unclear	Unclear	Unclear	Serious	Critical
Mann et al. (2016)[#]	-	Low	Moderate	Low	Moderate	Serious	Low
Meppelink et al. (2016)	Serious	Low	Unclear	Unclear	Moderate	Serious	Moderate
Neece (2014)[#]	-	Low	Unclear	Low	Low	Serious	Moderate
Potharst et al. (2017)	Serious	Low	Unclear	Low	Moderate	Serious	Moderate

Table 5 continued

Study	Confounding bias[a]	Selection bias[b]	Misclassification bias	Performance bias	Attrition bias	Detection bias	Reporting bias
Potharst et al. (2018a)	Serious	Low	Moderate	Low	Moderate	Serious	Moderate
Racey et al. (2017)	Serious	Low	Moderate	Moderate	Critical	Critical	Moderate
Ridderinkhof et al. (2017)	Serious	Low	Unclear	Moderate	Moderate	Serious	Moderate
Short et al. (2017)	Serious	Low	Unclear	Moderate	Low	Serious	Moderate
van de Weijer-Bergsma et al. (2012)	Serious	Low	Unclear	Low	Moderate	Moderate	Serious
van der Oord et al. (2012)	Serious	Low	Low	Low	Low	Serious	Moderate
Voos (2017)	Serious	Low	Moderate	Unclear	Moderate	Serious	Moderate
Xu (2017)	Serious	Low	Unclear	Unclear	Serious	Serious	Moderate
Zhang et al. (2017)	Serious	Low	Unclear	Moderate	Low	Serious	Moderate

Note. [#]RCT. For all RCTs in this table, the terms used to describe the level of bias have been changed from "Low", "High" and "Unclear" (used in the RoB tool), to "Low", "Moderate", "Serious", "Critical" and "Unclear", to reflect the terms and judgment guidelines used in ROBINS-I; [a]not relevant for RCTs; [b]For RCTs, the assessment of selection bias asks (1) whether there was random sequence generation and (2) whether there was allocation concealment. In this table, only one risk assessment is reported for RCTs under this bias domain, as the level of risk assessed for these two aspects of selection bias was equal for each of the reviewed RCTs.

Discussion

This review examined 25 independent studies of mindfulness interventions delivered to parents. We systematically evaluated the effectiveness of these interventions in reducing parenting stress and improving youth psychological outcomes. The results of the review show that mindfulness interventions for parents are associated with small to moderate immediate and maintained reductions in parenting stress. Reductions in parenting stress are greater for parents who attend mindfulness intervention groups than for those who attend control groups. Results also show that mindfulness interventions for parents are associated with small immediate and maintained improvements for youth across internalizing, externalizing, cognitive, and social domains of psychological functioning. Improvements in youth externalizing and cognitive outcomes are predicted by reductions in parenting stress, but no relationship was found between youth internalizing outcomes and parenting stress. There were insufficient studies to test the relationship between parenting stress and social outcomes.

Parenting Stress

For parenting stress, the small within-group reduction ($g = 0.34$) obtained immediately after intervention rose to a moderate reduction ($g = 0.53$) 2 months later. This suggests that the positive impact on parenting stress of the mindfulness intervention continued after the intervention ended. Two studies also measured parenting stress 1 year after the intervention, both reporting the maintenance of small to moderate reductions in parenting stress at that point. The five controlled studies reviewed showed that mindfulness interventions have a small to moderate advantage ($g = 0.44$) over active and waitlist controls in reducing parenting stress. These results, together with the finding that pre-test mindful parenting scores are negatively correlated with post-test parenting stress, but not vice versa (Haydicky et al., 2015), provide initial evidence that mindfulness interventions for parents contribute to reduced parenting stress.

To place our findings regarding the parenting stress effect size into context, we sought to compare the current results against those obtained in other meta-analyses. We were unable to find meta-analyses of mindfulness or other interventions that aimed at lowering parenting stress specifically. However, Lundahl et al. (2006a) assessed parental emotional adjustment, which incorporated parenting stress. They reported a moderate within-group improvement in that outcome, in their review of parent programs to reduce child abuse. The post-intervention effect in that study ($d = 0.53$) was larger than in the present study ($g = 0.34$). This may have been because the measure of parental emotional adjustment included a number of negative emotional states, such as anger, in addition to parenting stress. It is therefore possible that the effect size was driven by improvements in emotional states other than parenting stress.

We also sought to compare the advantage we found for mindfulness interventions over control groups to that found for other parent interventions. Again, we were unable to find any published meta-analyses concerning parenting stress as a standalone outcome. However, Lundahl et al. (2006b) reviewed the effects of parent training programs on a composite parenting outcome, which included parenting stress. Lundahl et al. (2006b) defined behavioral training programs as those teaching parents to reinforce their children's positive behavior and ignore or punish poor behavior. Non-behavioral programs were defined as those that did not teach these specific skills, and included programs aimed at improving parent-child communication or altering child-related cognitions. Based on this definition, mindfulness interventions are non-behavioral programs, and indeed the advantage over controls in the present study ($g = 0.44$) is similar to that found by Lundahl et al. (2006b) for non-behavioral parent programs ($d = 0.48$). The advantage of behavioral programs over controls was slightly larger ($d = 0.53$).

Interestingly, this review also found that the reduction in parenting stress was greater at follow up than post-intervention. This is in contrast to the pattern reported for behavioral

parent training by Lee et al. (2012), who found a reduced effect at follow-up for a composite parenting outcome that included parenting stress. Similarly, the effects of cognitive behavioral therapy for general stress are maintained at follow up, but not increased (Hofmann et al., 2012). The present results suggest, therefore, that mindfulness interventions provide durable outcomes for parents, and compare favorably in this respect to behavioral parent training and cognitive behavioral therapy.

Heterogeneity in relation to parenting stress is moderate to high, indicating variance in the true effect size across studies. Possible reasons for this variability were tested through categorical moderator analyses and meta-regression. The reduction in parenting stress was not moderated by either youth age or clinical status, or the length of the mindfulness course. This suggests that parents acquire generic skills in mindfulness programs lasting from 9 to 27 h, that they are able to apply in various parenting environments, and across their child's development. In contrast, the reduction in parenting stress was greater when the intervention was delivered only to parents, than when it was delivered to parallel parent and youth groups. This result was surprising, since it is reasonable to expect that training both parents and their children in mindfulness would contribute to better outcomes, given the bi-directionality of parent and child factors (Branje et al., 2010; Neece, 2014). To investigate this result further, the characteristics of the two subgroups were checked. Of the six studies in the parallel interventions subgroup, five involved youth diagnosed with ADHD. However, amongst the 15 studies in the parent-only intervention subgroup, only three involved parents whose children had been diagnosed with ADHD. Further, these three studies reported only 47, 31, and 7% of the parents' children as having ADHD. While no conclusion can be drawn, it is possible that the smaller reduction in parenting stress amongst parents in the parallel intervention subgroup is related to their child's diagnosis of ADHD, rather than the fact that both parents and their children received the intervention.

Youth Outcomes

The results of our review show that mindfulness interventions for parents are associated with improved youth outcomes. The summary effects indicate small, within-group improvements in internalizing (g = 0.29), externalizing (g = 0.26), cognitive (g = 0.27), and social (g = 0.28) domains. These improvements are maintained after 2 months for the internalizing (g = 0.33), externalizing (g = 0.39), and cognitive (g = 0.40) domains. There were insufficient studies to conduct a follow-up analysis for the social domain. There were also insufficient controlled studies to conduct a quantitative comparison of intervention groups with controls, for any of the youth outcomes. The results reported by the few studies that included a control group are mixed, with mindfulness groups outperforming waitlist controls in some studies but not others, for both internalizing and externalizing outcomes.

This is the first published meta-analysis regarding the effectiveness of mindfulness interventions for parents in improving youth outcomes. There are, therefore, no equivalent studies to compare the effects found in the present review against. A review of mindfulness interventions delivered to children and adolescents in schools found within-group effects for emotional problems and cognitive performance of g = 0.31 and g = 0.68, respectively (Zenner et al., 2014). It is possible that the effects reported in that study were larger than those in the present review because the interventions were delivered directly to the children and adolescents, rather than to parents. Looking at other parent-focused interventions, a meta-meta-analysis of studies for treating youth with externalizing disorders obtained effects for youth outcomes (externalizing and internalizing problems combined) of d = 0.46 post-intervention and d = 0.49 at follow-up (Mingebach et al., 2018). The larger improvements found in that review may reflect the fact that the majority of reviewed studies involved behavioral parent training interventions. Mindfulness interventions for parents appear,

559 therefore, to be associated with smaller improvements in youth outcomes than either
560 behavioral parent training or mindfulness interventions for youth.
561 Heterogeneity in connection with youth outcomes is low to moderate. Mindfulness
562 interventions for parents are associated with equally beneficial outcomes for children and
563 adolescents, whether they attend mindfulness training in parallel with their parents or not, and
564 regardless of the length of the mindfulness course. These results together suggest that even
565 shorter mindfulness programs can result in changes to parental functioning that are positive
566 for youth of any age. Meta-regressions were conducted to check whether change in parenting
567 stress predicted youth outcomes. Greater reductions in parenting stress did predict greater
568 improvements in youth externalizing and cognitive outcomes. This finding is consistent with
569 previous studies showing that parenting stress is related to harsh, over-reactive parenting
570 (Venta et al., 2016), and that harsh parenting predicts later youth behavior problems and
571 poorer attentional regulation (Eisenberg et al., 1999; Rominov et al., 2016). Therefore,
572 reductions in parenting stress may improve externalizing and cognitive outcomes.
573 Unlike externalizing and cognitive outcomes, reductions in parenting stress did not
574 predict improvements in youth internalizing outcomes. There are a number of possible
575 explanations for this. While youth externalizing problems can be aversive to parents and
576 contribute to higher parenting stress (Eisenberg et al., 1999; Neece et al., 2012), youth
577 internalizing problems tend to be subtle and non-aversive (Eisenberg et al., 1999).
578 Accordingly, it is possible that parents of youth with internalizing problems have a lower
579 baseline level of parenting stress than do parents of youth with externalizing problems. In this
580 case, we would expect a mindfulness intervention for parents of youth with internalizing
581 problems to have less of an impact on parenting stress. Any relationship between change in
582 parenting stress and change in internalizing problems may therefore be too small to detect.
583 Mindfulness interventions for parents could also affect youth internalizing outcomes through

584 a pathway other than parenting stress. For example, greater parental warmth and acceptance
585 toward children are associated with lower youth internalizing problems (Yap & Jorm, 2015).
586 As mindful parenting involves compassion, emotional warmth, and non-judgmental
587 acceptance toward a child (Duncan et al., 2009, 2015), mindfulness interventions may
588 improve internalizing outcomes by promoting these attitudes in parents. Internalizing
589 problems are also associated with difficulties with emotion regulation (Suveg & Zeman,
590 2004). For example, greater use by parents of adaptive emotion regulation strategies, such as
591 cognitive reappraisal, are associated with lower youth anxiety (Wald et al., 2018). Since
592 mindful parenting is also associated with greater parental self-regulation (Duncan et al., 2009;
593 Ridderinkhof et al., 2017), mindfulness interventions could reduce youth internalizing
594 problems by facilitating healthier forms of emotional regulation in parents.

595 **Methodological Limitations**

596 There are several limitations affecting the strength of the evidence provided by both
597 this review and the individual studies reviewed. At the review level, the number of studies
598 available for inclusion is still small. For this reason, we treated studies of mindful parenting
599 interventions and studies of other mindfulness-based interventions delivered to parents as a
600 single group. However, it is not currently known whether these two types of mindfulness
601 intervention have different outcomes for parents or youth, or whether they exert their effects
602 through different pathways. The number of available studies also had implications for testing
603 potential moderators, such as parent clinical status. It may also have affected our ability to
604 detect significant moderators and covariates. For example, although we found no relationship
605 between the length of the mindfulness course and either parenting stress or youth outcomes,
606 some other meta-analyses have found dose-response relationships for a range of outcomes
607 (Khoury et al., 2013; Zenner et al., 2014; cf. Vollestad et al., 2012). In general, due to the
608 relatively small number of studies in this review, some caution should be applied to the

609 interpretation of the moderator and meta-regression analyses. As more research is published
610 on mindfulness interventions for parents, future reviews with greater power will provide
611 more accurate information regarding significant moderators or covariates.
612 At the individual study level, small sample sizes are likely to have contributed to a
613 lack of statistical power to detect significant effects in a number of studies. A scan of Tables
614 2, 3 reveals several moderate to large effects, both post-intervention and at follow up, that are
615 reported as non-significant. The availability of small samples may have been a reason for the
616 single group design used in most of the reviewed studies. Due to the lack of randomization to
617 intervention or control groups, we cannot conclude that the reported effects are caused by the
618 mindfulness intervention. This is particularly the case for the various outcomes (anxiety,
619 depression, well-being, rumination, and executive functioning) that significantly improved at
620 follow up, but not immediately post-intervention. This longer term effect is consistent with
621 the self-sustaining change proposed to be the result of mindfulness practice (Dumas, 2005).
622 However, childhood is an ongoing period of development in which changes may occur in
623 various domains of functioning over time, for many reasons. When more time has passed, it
624 is more likely that extraneous variables may have contributed to changes in outcomes,
625 making the causal link between the intervention and the effect more tenuous.
626 All studies were judged to have at least a serious risk of bias. Whilst this was partly
627 due to the lack of randomization noted above, the subjective reporting of most outcomes in
628 each study was also an issue. In the context of mindfulness interventions, which parents must
629 invest a significant amount of time and effort to attend, relying on parent reports may
630 increase the risk of detection bias. Although it is difficult to address this issue in studies in
631 which many outcomes must be subjectively reported, obtaining reports from different
632 sources, such as mothers, fathers, youth and teachers, and obtaining objective measures if
633 possible, may give a more complete picture. For example, Lewallen and Neece (2015) found

634 that teachers reported significant improvements in more social domains than parents did. This
635 suggests that youth outcomes may differ across contexts. Similarly, the differences between
636 mothers and fathers in post-intervention parenting stress (van de Weijer-Bergsma et al., 2012)
637 might indicate a systematic difference in how mothers and fathers respond to a mindfulness
638 intervention. Finally, assessment of treatment adherence and integrity was problematic in
639 many studies, as limited information was reported regarding session attendance rates,
640 homework completion or instructor training. Lack of detailed implementation-related data
641 appears to be a common issue in connection with mindfulness interventions (Vollestad et al.,
642 2012; Zou et al., 2018).

643 **Future Directions**

644 The results of this review show that further research on mindfulness interventions for
645 parents is desirable. Future studies are needed to address the methodological limitations
646 identified above. For example, there is evidence that variables such as therapist experience
647 with mindfulness (Khoury et al., 2013), amount of home practice (Parsons et al., 2017) and
648 total time of mindfulness training (Zenner et al., 2014) can moderate outcomes. Inclusion of
649 more information on these variables would allow reviewers to investigate more potential
650 moderators. In addition, randomizing participants to control and intervention groups would
651 allow firmer conclusions to be drawn about whether mindfulness in parenting played a causal
652 role in relevant outcomes.

653 Use of randomized controlled studies would also allow comparisons to be made
654 between mindfulness interventions and other active interventions such as behavioral parent
655 training. For youth with externalizing problems, behavioral parent training is an effective and
656 widely used intervention (Dretzke et al., 2009). However, some parents, such as those with
657 their own psychopathology, benefit less from behavioral parent training than others (Maliken
658 & Katz, 2013). This may be because these parents find it difficult to apply new parenting

skills in stressful situations with their child and revert to old patterns of responding in those situations (Siegel & Hartzell, 2004). Given its focus upon reducing parenting stress, mindfulness-based interventions might be of greater benefit to these families than behavioral parent training.

The majority of studies involved parents with children under 12 years, or parents managing youth externalizing problems. Very few studies included parents of youth with internalizing problems. It is therefore recommended that additional research be done in community samples or in clinical samples of families experiencing youth internalizing problems. As no relationship was found between parenting stress and youth internalizing outcomes, research with these samples could investigate whether mindfulness in parenting is associated with potential mediators other than parenting stress. These could include parental factors known to be associated with youth internalizing problems. Finally, relatively few studies examined outcomes for families with adolescents and only one of these (Corthorn, 2018) included parents of adolescents without a clinical diagnosis. Adolescence is associated with increased negative affect (Kim et al., 2001) and conflict (Laursen et al., 1998), and may be a time of potentially stressful change in the parent-child relationship (Duncan et al., 2009). Importantly, it is also a time when many psychological disorders are first diagnosed (Copeland et al., 2009). Research could usefully address the question of whether mindfulness interventions for parents of adolescents are effective as a preventive intervention for adolescent psychological problems.

Conclusion

The results of the present review show that mindfulness interventions for parents are associated with reduced parenting stress for parents of both children and adolescents. They are also associated with improved youth psychological functioning across internalizing, externalizing, cognitive, and social domains. Reduced parenting stress predicts improvement

684 in youth externalizing and cognitive outcomes, but not youth internalizing outcomes.
685 Methodological weaknesses in the available literature prevent firm conclusions from being
686 drawn regarding the causal role of mindfulness training for parents in relation to each of these
687 outcomes. Further research is recommended to address limitations in the current literature
688 and questions raised by this review.
689

CHAPTER THREE. Confirmatory Factor Analyses

The Interpersonal Mindfulness in Parenting Scale: Factor structure in mothers of children and infants

Chapter 3 contains confirmatory factor analyses of the Interpersonal Mindfulness in Parenting scale. The fit of several models of mindful parenting are tested, in English-language mothers of children and mothers of infants.

This Chapter reproduces the parts of the published article referred to below (Appendix B1) that relate to the factor structure of the IMP, but omits the parts relating to associations with child internalizing problems. To maintain the continuity and meaning of the text in Chapter 3 after the omissions, and to ensure that its format is consistent with the layout of this thesis, minor amendments have been made to the retained aspects of the published article.

Burgdorf, V., & Szabó, M. (2021). The Interpersonal Mindfulness in Parenting Scale in mothers of children and infants: Factor structure and associations with child internalizing problems. *Frontiers in Psychology, 11:633709*. doi: 10.3389/fpsyg.2020.633709

Abstract

Objectives: Mindful parenting is beneficial for parents and children. It is proposed that mindful parenting is comprised of five dimensions, measured by the 31-item Interpersonal Mindfulness in Parenting scale (IMP). However, the IMP has not been validated in English-speaking parents, and investigations of the factor structure of translated versions of the IMP have not supported the proposed dimensions. Further, little is known about whether mindful parenting is similar in parents of children and parents of infants. We therefore sought to validate the IMP in English-speaking mothers of children and mothers of infants.

Methods: Using confirmatory factor analyses, we examined the fit of the originally hypothesized 5-factor model of mindful parenting, and the later, empirically derived 6-factor Dutch and 5-factor Portuguese models of mindful parenting. We did this in separate groups of English-speaking community-recruited mothers of children aged 3–18 years (n = 396) and infants aged 0–2 years (n = 320).

Results: The original model of mindful parenting, proposed to be measured by the 31-item IMP, was a poor fit in both groups of mothers. However, the 6-factor Dutch and 5-factor Portuguese versions of the IMP, which each excluded items 3 and 6, were a good fit. These two versions of the IMP operate similarly for mothers of children and infants.

Conclusions: The IMP is a valid measure of mindful parenting in English-speaking mothers of children and mothers of infants. The construct of mindful parenting is similar for both groups of mothers.

Introduction

Mindful parenting has been defined as parenting with the aim of paying non-judgmental, non-reactive attention to each moment and interaction with the child (Kabat-Zinn & Kabat-Zinn, 1997). Mindful parents are thought to be able to regulate their parenting behaviors to better support their child's needs (Duncan et al., 2009). Indeed, a recent meta-analysis has shown that mindful parenting interventions are associated with reductions in parenting stress and children's externalizing and internalizing problems (Burgdorf et al., 2019). The Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007; Duncan et al., 2009) is the most widely used instrument in mindful parenting research. However, the current version of the IMP has not been validated in an English-speaking population, and little is known about its psychometric properties in mothers of children or infants. This study aimed to address these issues.

The first instrument developed to measure the construct of mindful parenting was the 10-item IMP, which was originally developed for parents of adolescents (Duncan, 2007). The IMP was subsequently expanded to a 31-item instrument, which was proposed to involve five dimensions (Duncan et al., 2009): Listening with Full Attention (LFA), Non-judgmental Acceptance of Self and Child (NJA-SC), Compassion for Self and Child (C-SC), Emotional Awareness of Self and Child (EA-SC), and Self-regulation in Parenting (SRP). Although the IMP has been widely used in research since its development, there are currently no published studies validating this proposed five factor structure in an English-language population.

A small number of studies have explored the factor structure of translated versions of the IMP. The first such study tested a Dutch translation of the IMP in a Dutch community sample of mothers of 12–15-year-old (M = 13.3 years) adolescents (de Bruin et al., 2014). The results did not support Duncan et al.'s proposed 5-factor model. Instead, exploratory and confirmatory factor analyses suggested six factors. The primary difference between de Bruin

et al.'s findings and Duncan et al.'s proposed model was that the parent- and child-focussed items relating to compassion, non-judgment and emotional awareness loaded on separate factors, resulting in the six empirically derived dimensions of (1) Listening with Full Attention (LFA), (2) Non-judgmental Acceptance of Parental Functioning (NJAPF), (3) Compassion for the Child (CC), (4) Emotional Awareness of the Child (EAC), (5) Emotional Non-reactivity in Parenting (ENRP), and (6) Emotional Awareness of Self (EAS). In addition, items 3 and 6 were excluded due to low factor loadings, resulting in a 29-item six-factor instrument (de Bruin et al). Another translation of the IMP was tested in a Portuguese-speaking community group of mothers of 1–18-year-olds (M = 5.86 years) (Moreira & Canavarro, 2017). Exploratory and confirmatory factor analyses supported the deletion of items 3 and 6, but the findings concerning factor structure were somewhat different from the findings of de Bruin et al. (2014). Listening with Full Attention, Non-judgmental Acceptance of Parental Functioning, Compassion for the Child and Emotional Awareness of the Child contained largely the same items as the Dutch LFA, NJAPF, CC, and EAC factors. However, in this study a new Self-regulation in Parenting (SRP) factor emerged, combining the items from the Dutch ENRP and EAS factors, resulting in a 29-item, five-factor model. Translations of the IMP have also been tested in non-Western countries, including in Hong Kong Chinese parents of 2–19-year-olds (Lo et al., 2018) and Korean parents of 1–18 year-olds (Kim et al., 2018). Numerous items were deleted in both studies, suggesting that the English-language IMP may not easily translate to all other languages or cultures (Lo et al., 2018).

While the differences between the Asian and European studies' findings may be due to linguistic or cultural variations, the differences in the results reported by de Bruin et al. (2014) and Moreira and Canavarro (2017) could partly reflect the differing ages of the children involved in the two studies. Children have different parenting requirements at

781 different developmental stages, such as physical proximity during infancy and autonomy
782 support during adolescence (Karavasilis et al., 2003). It is therefore likely that mindful
783 parenting behaviors differ at different child developmental stages, and separate mindful
784 parenting programs have been offered for parents of infants and children (for example,
785 Potharst et al., 2017). Such differences are not reflected in the current version of the IMP,
786 however. Indeed, some IMP items have limited face validity for parents of pre-verbal
787 children. For example, item 4 ("I listen carefully to my child's ideas, even when I disagree
788 with them") may only be relevant for parents with children who can express themselves
789 verbally. Therefore, the structure of the IMP should be examined separately in parents of pre-
790 verbal infants and parents of children, to clarify whether the IMP operates equivalently for
791 these two groups of parents.

792 Given the growing research interest in mindful parenting programs, the issues raised
793 above regarding the IMP need to be addressed. The aim of this study was to examine the fit
794 of the model of mindful parenting proposed by Duncan et al. (2009), as well as the two
795 empirically derived models reported by de Bruin et al. (2014) and Moreira and Canavarro
796 (2017), in English-speaking parents, using confirmatory factor analyses (CFAs). We
797 conducted these analyses separately in parents of infants and parents of children, to explore
798 possible differences in the factor structure of the IMP for these two groups of parents.

799 **Methods**

800 **Participants and Procedures**

801 The study procedures were approved by The University of Sydney Human Research
802 Ethics Committee (approval number 183/2019 and 440/2019). A total of 990 participants
803 were recruited from the community, using targeted Facebook advertisements. The
804 advertisement contained a link to the information statement and consent form, hosted on the
805 secure data collection website Qualtrics. People were invited to take part if English was their

primary language and they were a parent, or acting in the role of parent, to at least one child aged 0–20 years. There were no exclusion criteria. Participants with more than one child were asked to answer the parenting questions with regard to just one of their children.

From the 990 participants who provided informed consent, 765 participants completed the demographic data and the IMP (Duncan et al., 2009). To increase consistency with de Bruin et al. (2014) and Moreira and Canavarro (2017), we removed the data of fathers (n = 41) and the data of parents of children aged 19–20 years of age (n = 8), leaving data for the confirmatory factor analyses from 716 mothers (or other female caregivers) of children aged 0 –18 years. The age of the mothers or other female caregivers of infants ranged from 22 to 56 years (M = 32.25; SD = 4.79) and their infants' mean age was 0.90 years (SD = 0.78). Mothers or other female caregivers of children were aged between 26 and 58 years (M = 39.21, SD = 6.60), and the mean age of their children was 8.23 years (SD = 4.21). Table 1 contains further information on sample characteristics.

As shown in Table 1, there were several demographic differences between the two groups of mothers. Compared to mothers of children, more mothers of infants identified as a primary carer rather than as an equal carer, and families of infants generally had fewer children. A slightly higher proportion of mothers of infants also reported having previously been diagnosed with a mental health condition and having a history of practicing mindfulness. Amongst mothers who reported a history of mindfulness practice, slightly more mothers of children than infants reported that they currently practiced mindfulness at least monthly.

Table 1

Sample characteristics (N = 716)

Characteristic	Parents of children *n* = 396		Parents of infants *n* = 320		Difference between groups	
	n	%	*n*	%	χ^2 *(df)*	ϕ_C
Child gender					1.78	.05
Male	161	50.3	192	48.6		
Female	201	50.9	159	49.7		
Other	2	0.5				
Parent relation to child					0.34	.02
Biological mother	386	97.5	314	98.1		
Other female caregiver	10	2.5	6	1.9		
Caregiver role					9.57**	.12
Primary carer	271	68.4	252	78.8		
Equal carer[a]	121	30.6	66	20.6		
Secondary carer	4	1.0	2	0.6		
No. children in family					205.16***	.54
1	75	18.9	228	71.3		
2	198	50.0	70	21.9		
3	100	25.3	14	4.4		
≥ 4	23	5.8	8	2.5		
Parent country of residence					3.00	.07
Australia	304	78.6	232	73.0		
Other	83	21.6	86	29.1		
Parent highest level of education					0.02	.01
Post-graduate or Bachelor degree	290	73.8	236	73.8		
Associate degree/vocational training	53	13.5	44	13.8		
Secondary school or other	50	12.8	40	12.5		
Parent previous mental health diagnosis					5.36*	.09
No	248	62.6	173	54.1		
Yes	148	37.4	147	45.9		
History of formal mindfulness practice					4.74*	0.08
Yes	144	36.4	142	44.4		
No	252	63.6	178	55.6		
Length of mindfulness practice					2.35	.08
< 1 year	64	46.0	68	48.9		
≥ 1 year	75	54.0	71	51.1		

Table 1 continued

Frequency of mindfulness practice					4.85*	0.11
< Monthly	50	36.0	80	57.6		
≥ Monthly	89	64.0	59	42.4		

Note. ϕ_C is Cramer's V effect size, where 0.1-0.3 is a small effect, 0.3-0.5 a moderate effect and >0.5 a large effect (Cohen, 1988).

[a]Equal carer is a parent who reports sharing the care of their child approximately equally with another person.

$^{*}p \leq .05$. $^{**}p \leq .01$. $^{***}p \leq .001$.

Measures

Demographics and Mindfulness Practice Questionnaire: demographic information was collected from participants on the variables presented in Table 1. Participants were also asked whether they had ever engaged in formal mindfulness or other form of meditation or contemplative practice. Response options were one or more of mindfulness, yoga, tai chi, other (*participant to specify*) or none. Participants who indicated some form of past formal practice were asked to indicate approximately how long they had engaged in that practice. For the purposes of the analyses in this paper, answers were dichotomized into "*less than 1 year*" and "*1 year or more*." For those currently practicing, the reported frequency of practice was dichotomized into "*less than monthly*" and "*monthly or more*." The data reported in this paper relate only to history, length and frequency of formal mindfulness practice.

Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007, Duncan et al., 2009): the 31-item IMP measures mindfulness in the parenting context. The items are rated using a 5-point Likert-type scale, where 1 = *Never true*, 2 = *Rarely true*, 3 = *Sometimes true*, 4 = *Often true* and 5 = *Always true*. A total score is calculated by summing the items, with 14 items (1, 5, 9–15, 17, 19, 23, 26 and 29) reverse coded. Higher scores indicate more mindful parenting.

Statistical Analysis

The confirmatory factor analyses were conducted using AMOS version 25. To check whether the data met the assumption of multivariate normality of distribution underlying structural equation modeling, we screened for multivariate kurtosis and outliers. In both groups of mothers, screening revealed mild multivariate kurtosis and no clear outliers based on an examination of the squared Mahalanobis distance for each case. Goodness-of-fit was assessed against several indices in addition to the chi-square test. Good and adequate fit were indicated, respectively, by normed chi-square (χ^2/df) ≤ 2 and ≤ 5, a comparative fit index (CFI) ≥ 0.95 and ≥ 0.90, root-mean-square error of approximation (RMSEA) ≤ 0.05 and ≤ 0.08, and standardized root mean square residual (SRMR) ≤ 0.08 and ≤ 0.10 (Byrne, 2010).

Results

Confirmatory Factor Analysis

We began by testing the fit of the Duncan et al. (2009), de Bruin et al. (2014), and Moreira and Canavarro (2017) models in mothers of children. The fit indices are in Table 2. Based on all the indices used, Duncan et al.'s proposed model (Model C.1) was a poor fit to the data. The factor loadings for items 3 and 6 were low (0.07 and 0.21, respectively) and the loading for item 3 was non-significant. Due to the poor model fit, we did not examine modification indices for this model.

Table 2

Fit indices from the confirmatory factor analyses, for mothers of children (n = 396)

	Model	χ^2	*df*	χ^2/df	CFI	RMSEA	90% CI for RMSEA	SRMR	Change from previous model ($\Delta\chi^2$)
C.1	Duncan et al., 31 items	1698.70**	424	4.01	.750	.087	[.083, .092]	.1027	-
C.2	de Bruin et al., 31 items	944.81**	419	2.26	.897	.056	[.052, .061]	.0686	-
C.3	de Bruin et al., 29 items (excluding items 3 & 6)	764.36**	362	2.11	.919	.053	[.048, .058]	.0592	180.45(57)*
C.4	de Bruin et al., 29 items (covary e18 & e20)	733.53**	361	2.03	.925	.051	[.046, .056]	.0598	30.83(1)*
C.5	de Bruin et al., 29 items (cross-load item 24)	693.41**	360	1.93	.933	.048	[.043, .054]	.0575	40.12(1)*
C.6	Moreira & Canavarro, 29 items	835.13**	367	2.28	.906	.057	[.052, .062]	.0623	-
C.7	Moreira & Canavarro, 29 items (covary e18 & e20)	808.74**	366	2.21	.911	.055	[.050, .060]	.0628	26.39(1)*
C.8	Moreira & Canavarro, 29 items (cross-load item 24)	780.16**	365	2.14	.916	.054	[.048, .059]	.0622	28.58(1)*
C.9	Moreira & Canavarro, 29 items (covary e2 & e21)	743.53**	364	2.04	.924	.051	[.046, .057]	.0605	36.36(1)*

Note. CFI is Comparative fit index; RMSEA is root-mean-square error of approximation; SRMR is standardized root mean square residual.

$^{*}p<.01$. $^{**}p<.001$.

Next, we examined the fit of the de Bruin et al. model. We began by specifying a six-factor model containing all 31 IMP items (Model C.2), to check whether items 3 and 6 remained problematic. The factor loadings for items 3 (0.08) and 6 (0.04) were again low and non-significant. We therefore excluded those items and specified a 29-item six-factor model

(Model C.3). The fit indices ranged from adequate to good, and the fit improved compared to Model C.2. The modification indices for Model C.3 suggested covariance between the errors for two items loading on NJAPF (items 18 and 20). Because both items were related to acceptance of parenting mistakes, we decided to allow these errors to covary (Model C.4). Model fit significantly improved and the fit indices ranged from adequate to good. The modification indices for Model C.4 indicated a cross-loading for item 24, on the CC factor. Item 24 refers to the parent paying close attention to the child when together. As this is similar to several CC items which refer to the parent being attentive to the child in different ways, we made this modification. The revised model (Model C.5) was a reasonably good fit to the data and an improvement on Model C.4. There were no further substantial or theoretically justified error covariances or model misspecifications indicated by the modification indices.

We then tested the 29-item, five-factor Moreira and Canavarro model (Model C.6) in mothers of children. Model C.6 was an adequate to good fit to the data. All factor loadings were significant. The loading for item 10 was 0.36, with all others >0.56. Like the de Bruin et al. model, modification indices suggested an error covariance for items 18 and 20. When this modification was made (Model C.7), the fit improved. The modification indices for Model C.7 suggested the same cross loading for item 24 on CC. When that cross-loading was allowed, the re-specified model (Model C.8) was again an improvement on the previous model. For Model C.8, modification indices suggested covariance between the errors for items 2 and 21, which both load on the SRP factor. As these items are similar and both relate to pausing before acting, we allowed this error covariance. This resulted in Model C.9, whose indices indicated an adequate to good fit to the data and were a significant improvement on the previous model. No further meaningful modifications were indicated.

In mothers of infants, we followed the same process as set out above. Table 3 contains the fit indices for mothers of infants. The Duncan et al. model (Model I.1) exhibited a poor fit. The factor loadings of items 3 and 6 were low (both 0.03) and nonsignificant, and the loading for item 10 was low (0.24). We did not check modification indices for this model, due to the poor fit.

Table 3

Fit indices from the confirmatory factor analyses, for mothers of infants (n = 320)

	Model	χ^2	*df*	χ^2/df	CFI	RMSEA	90% CI for RMSEA	SRMR	Change from previous model ($\Delta\chi^2$)
I.1	Duncan et al., 31 items	1437.17**	424	3.39	.728	.087	[.082, .091]	.0953	-
I.2	de Bruin et al., 31 items	791.75**	419	1.89	.900	.053	[.047, .058]	.0705	-
I.3	de Bruin et al., 29 items (excluding items 3 & 6)	669.27**	362	1.85	.916	.052	[.045, .058]	.0662	122.48(57)*
I.4	de Bruin et al., 29 items (covary e4 & e28)	649.22**	361	1.80	.921	.050	[.044, .056]	.0662	20.05(1)*
I.5	de Bruin et al., 29 items (covary e4 & e7)	630.76**	360	1.75	.926	.049	[.042, .055]	.0660	18.46(1)*
I.6	Moreira & Canavarro, 29 items	705.06**	367	1.92	.907	.054	[.048, .060]	.0661	-
I.7	Moreira & Canavarro, 29 items (covary e14 & e29)	666.45**	366	1.82	.918	.051	[.045, .057]	.0649	38.61(1)*
I.8	Moreira & Canavarro, 29 items (covary e4 & e28)	645.71**	365	1.77	.923	.049	[.043, .055]	.0649	20.74(1)*
I.9	Moreira & Canavarro, 29 items (covary e4 & e7)	626.75**	364	1.72	.928	.048	[.041, .054]	.0646	18.96(1)*

Note. CFI is Comparative fit index; RMSEA is root-mean-square error of approximation; SRMR is standardized root mean square residual.

*p<.01. **p<.001.

We then tested the de Bruin et al. model (Model I.2). The covariance matrix indicated a reasonably good fit to the observed matrix. The loadings for items 3 and 6 were low (both 0.10) and non-significant. The factor loading for item 10 was also low (0.17), but significant ($p < .001$). Therefore, items 3 and 6 were excluded and the model re-specified with 29 items (Model I.3). Modification indices suggested error covariances that differed from those found in the sample of mothers of children. For Model I.3, covariance between the errors for CC items 4 and 28, which refer to listening to the child's point of view, was suggested. These errors were allowed to covary, resulting in a significantly improved fit (Model I.4). The modification indices for Model I.4 then suggested covariance between a similar pair of items loading on CC. Items 4 and 7 both relate to allowing a child to express themselves, even in circumstances when this might be difficult for the parent. This modification was made, leading to a further improvement (Model I.5). The modification indices for Model I.5 did not indicate any substantial error covariances or misspecifications to the model.

Last, we examined the 29-item Moreira and Canavarro model in mothers of infants (Model I.6). Model I.6 was a reasonably good fit. Item 10 had the lowest factor loading (0.28), with all other loadings at least 0.44. All loadings were significant. The modification indices for Model I.6 indicated covariance between the errors for items 14 and 29. As these items both load on the SRP factor and refer to parental over-reactivity to the child when upset, they were allowed to covary. With the model re-specified (Model I.7), the fit improved. Modification indices for Model I.7 then suggested covarying errors for CC items 4 and 28. When this modification was made, the fit improved (Model I.8). For Model I.8, the only substantial change suggested was the covariance of the errors for CC items 4 and 7. With this modification, the fit of the revised model (Model I.9) improved and exhibited a reasonably good fit to the data. No further modifications were warranted.

For both groups of mothers, fewer modifications needed to be made to the de Bruin et al. model to achieve optimum fit. The principal difference between the Moreira and Canavarro and de Bruin et al. models is that the items loading on the Dutch EAS and ENRP factors are combined into the single SRP factor in the Moreira and Canavarro model. Although the Dutch EAS and ENRP factors are closely related, they tap theoretically distinct aspects of parenting, that is emotional self-awareness and non-reactivity. We therefore decided to use the de Bruin et al. model in all following analyses to identify whether these two factors have unique predictive value. The factor loadings for the de Bruin et al. model for mothers of children and infants (Models C.5 and I.5), and the Cronbach's alpha for each scale, are presented in Table 4.

Table 4

Standardized factor loadings for 29-item de Bruin et al. model, for mothers of children (Model C.5) and infants (Model I.5)

		Mothers of children (n = 396)						Mothers of infants (n = 320)					
	Item	LFA	NJAPF	EAC	CC	EAS	ENRP	LFA	NJAPF	EAC	CC	EAS	ENRP
1	Listening to my child with one ear	.72						.65					
9	Rush through activities without being attentive	.79						.69					
13	Easily distracted when with my child	.77						.72					
19	Not listening, busy thinking about other things	.78						.76					
24	Pay close attention to child when together	.54			.32			.72					
15	Hard on myself regarding parenting mistakes		.70						.75				
17	Blame myself when times are difficult with child		.69						.76				
18	Accept parenting mistakes and move on		.60						.63				
20	Give myself a break if I regret my parenting actions		.55						.68				
23	Criticize myself for my parenting		.84						.76				
26	Think other parents have it easier with parenting		.64						.62				
12	Hard to tell what my child is feeling			.73						.62			
22	Find it easy to tell when my child is worried			.74						.69			
30	Can tell what my child is feeling			.85						.77			
4	Listening carefully to child's ideas				.64						.37		
7	Allow my child to express their feelings				.57						.62		
25	Kind to my child when they upset				.65						.67		
27	Nurturing with child when they having a difficult time				.69						.74		
28	Try to understand child's point of view				.71						.68		
31	Patient with child when they having a hard time				.70						.77		

Table 4 continued

		Mothers of children (n = 396)						Mothers of infants (n = 320)					
	Item	LFA	NJAPF	EAC	CC	EAS	ENRP	LFA	NJAPF	EAC	CC	EAS	ENRP
2	Notice how I feel before I take action					.66						.65	
8	When upset, I calmly tell child how I feel					.65						.49	
16	Try to keep my emotions in balance when upset					.68						.72	
21	Pause before reacting, in difficult situations					.77						.71	
5	React too quickly to my child						.71						.67
10	Difficulty accepting child's growing independence						.34						.16
11	Only realize later that feelings affect parenting decisions						.64						.68
14	Do things I regret when my child misbehaves						.77						.76
29	Get carried away with my feelings when child upsets me						.76						.83
	Cronbach's alpha for scale:	.87	.84	.81	.82	.78	.77	.83	.85	.73	.81	.73	.73

Note. LFA is the Listening with Full Attention scale of the Interpersonal Mindfulness in Parenting questionnaire (IMP); NJAPF is the Non-judgmental Acceptance of Parental Functioning scale of the IMP; EAC is the Emotional Awareness of the Child scale of the IMP; CC is the Compassion for the Child scale of the IMP; EAS is the Emotional Awareness of the Self scale of the IMP; ENRP is the Emotional Non-reactivity in Parenting scale of the IMP.

Relationships Between IMP and Demographic and Mindfulness Practice Variables

There were no significant relationships (all *p*s > .05) between IMP scores and the background demographic variables, except for small positive associations between IMP scores and parent or child age. These correlations were very small and likely to have no practical significance (e.g., $r = .13$, $p = .008$ between parent age and IMP score amongst mothers of children). IMP scores were significantly associated with parent mental health for both groups. Mothers of children without a previous mental health diagnosis reported more mindful parenting ($M = 103.89$, $SD = 12.75$) than those with a previous diagnosis ($M = 98.97$, $SD = 12.75$; $t = -3.72$, $p < .001$). The same pattern was found amongst mothers of infants, with more mindful parenting in those without a previous diagnosis ($M = 107.67$, $SD = 12.44$), than in those with one ($M = 104.85$, $SD = 12.43$; $t = -2.02$, $p = .044$).

IMP scores were also related to some aspects of mindfulness practice. Amongst mothers of children, there was no difference in IMP scores based on history of formal mindfulness practice or the length of that practice history (both *p*s > .05). However, IMP scores were related to frequency of current practice, with mothers who reported at least monthly practice having higher scores ($M = 104.92$, $SD = 13.03$) than those practicing less than monthly ($M = 98.28$, $SD = 11.36$; $t = 3.02$, $p = .003$). In mothers of infants, IMP scores were higher amongst mothers with a history of formal mindfulness practice ($M = 108.28$, $SD = 12.15$), compared to those without that history ($M = 104.85$, $SD = 12.60$; $t = -2.46$, $p = .015$), and amongst those who had practiced for more than 1 year ($M = 111.04$, $SD = 12.37$), compared to those who had practiced for less than a year ($M = 105.71$, $SD = 1.36$; $t = -2.65$, $p = .009$). However, IMP scores did not differ according to frequency of current practice ($p > .05$) in this group.

Discussion

This study sought to examine the structure of mindful parenting in an English-speaking population, and to determine whether it differed for parents of infants and parents of children. In relation to factor structure, the model proposed by Duncan et al. (2009) was a poor fit in both groups of mothers. In contrast, the de Bruin et al. (2014) and Moreira and Canavarro (2017) models were an adequate to good fit in both mothers of children and infants. Amongst mothers of children, the slightly better fit indices and lower number of modifications required suggested the de Bruin et al. model was a marginally better fit to the data. Amongst mothers of infants, the indices showed both models to be a reasonably good fit, although the de Bruin et al. model again required fewer modifications to achieve best fit. The divergence of fit between the proposed Duncan et al. model on the one hand, and the de Bruin et al. and Moreira and Canavarro models on the other, supports the separation of the parent- and child-focused items relating to compassion, non-judgment, and emotional awareness onto separate factors. This separation of parent- and child-focused items in an English-speaking group of mothers confirms that this is a reflection of the construct of mindful parenting rather than an artifact of the translation process or a reflection of cultural differences. Our results also confirm that items 3 and 6 should be deleted from the IMP, as suggested by de Bruin et al. (2014) and Moreira and Canavarro (2017).

The fit of the de Bruin et al. (2014) and Moreira and Canavarro (2017) models in both groups of mothers also shows that the construct of mindful parenting is similar for mothers of children and mothers of infants. One potential issue regarding the operation of the IMP in parents of pre-verbal infants was that some items appeared to have limited face validity. For example, the wording of items 4 (“I listen carefully to my child’s ideas, even when I disagree with them”) and 28 (“I try to understand my child’s point of view, even when his/her opinions do not make sense to me”) appears relevant only to parents of children who can

verbally express ideas or opinions. For item 28, the loadings were very similar across mothers of children (0.71) and infants (0.68). For item 4, although the loading for mothers of infants (0.37) was lower than for mothers of children (0.64), it was significant. In addition, amongst mothers of infants but not children, the errors for items 4 and 28 were correlated. This pattern of factor loadings, and the error covariance for mothers of infants only, suggests that even though infants do not have sufficient verbal skills to express their opinions, these items are measuring an underlying understanding by mothers that infants can communicate in other ways, such as through displays of emotion. Mothers therefore appear to interpret these items in a manner that is applicable to the developmental age of their child.

There was also some variation between the two groups of mothers in the size of the loadings for item 10 ("I have difficulty accepting my child's growing independence"). This item had a loading on the ENRP facet of only 0.16 for mothers of infants, and only 0.34 for mothers of children. As the group of mothers of children had a broader range of children, including adolescents in the process of gaining independence from their parents (Moretti & Peled, 2004), it is expected that item 10 would be more relevant to those mothers. However, both loadings were still low, raising the question as to whether it is a good indicator of non-reactivity. This item was also problematic in the unpublished validation of the 10-item IMP (Duncan, 2007), where it showed low correlations with other items. Further investigations could help clarify whether item 10 should be retained in the IMP.

Clinical Implications

The findings discussed above have potentially important clinical implications. First, since the construct of mindful parenting is similar for parents of children and infants, programs that seek to develop mindful parenting skills are likely to benefit families whether they have children or infants. This study, together with others that have examined this construct in different age groups (for example, de Bruin et al., 2014; Kim et al., 2018),

1033 therefore provides evidence for the relevance of mindful parenting for all families, regardless
1034 of the developmental stage of their children. Second, in line with evidence that mindful
1035 parenting and general trait mindfulness are correlated (Meppelink et al., 2016), the present
1036 results showed mindful parenting was related to formal mindfulness practice. However, these
1037 relationships were weak, indicating that a parent's general mindfulness practice may not have
1038 a meaningful impact on their ability to be mindful with their child. For parents wishing to
1039 manage their own stress or other mental health concerns, general mindfulness practice may
1040 be sufficient to address these concerns. However, as increases in mindful parenting, but not
1041 general mindfulness, predict reductions in child psychopathology (Meppelink et al., 2016),
1042 families managing child psychopathology may benefit more from mindful parenting
1043 programs targeted specifically toward parenting difficulties, rather than from general
1044 mindfulness programs.

1045 **Limitations**

1046 There are limitations to note in connection with this study. First, as the IMP validation
1047 was undertaken only with mothers, the results are not generalizable to fathers. We are
1048 unaware of any investigations of the IMP's factor structure in father-only samples, so a gap
1049 remains in our understanding of how the construct of mindful parenting may compare in
1050 fathers and mothers. This issue is an important one to address because it informs the question
1051 of whether mindful parenting programs, which are currently the same for mothers and
1052 fathers, should be tailored to reflect any gender differences in mindful parenting. Second, we
1053 only considered the structure of mindful parenting in infants aged 0–2 years and children
1054 aged 3–18 years. The group of children in particular had a broad age rang and given that
1055 parenting children at each end of this age range may be quite different, it would be interesting
1056 for future studies to look at mindful parenting in more precise age groups.

Conclusion

This study shows for the first time that the IMP is a valid measure of mindful parenting in English-speaking, community recruited mothers. Importantly, it also confirms that the IMP operates similarly amongst mothers of pre-verbal infants and mothers of children.

CHAPTER FOUR. Regression analyses

Mindful parenting: Associations with child internalizing problems and parent variables related to child internalizing problems

In Chapter 4, regression analyses are used to investigate whether mindful parenting predicts child internalizing problems and several parent variables related to child internalizing problems, and if so, which facets of mindful parenting are most relevant to those child and parent variables.

This Chapter reproduces parts of the published article referred to below (Appendix B1) that relate to the associations between the IMP and child internalizing problems. As these aspects of the published article constituted only a minor part of the overall article, Chapter 4 substantially expands upon them to ensure that the thesis forms a cohesive whole, as required by the University's procedures relating to higher degrees by research.

Burgdorf, V., & Szabó, M. (2021). The Interpersonal Mindfulness in Parenting Scale in mothers of children and infants: Factor structure and associations with child internalizing problems. *Frontiers in Psychology, 11:633709*. doi: 10.3389/fpsyg.2020.633709

Abstract

Objectives: Mindful parenting appears beneficial for parents and children. However, little is known about how the benefits are passed on to children, in particular how it reduces child internalizing problems. We aimed to identify parent factors that might explain how mindful parenting reduces child internalizing problems, which facets of mindful parenting are related to those parent factors and child internalizing problems and whether those facets differ for parents of children and infants.

Methods: We used simultaneous multiple regression analyses to find whether particular facets of mindful parenting would predict child internalizing problems, parental experiential avoidance, cognitive emotion regulation, and unhelpful beliefs and behaviors regarding child anxiety. Analyses were done separately for English-speaking community-recruited mothers of children aged 3–18 years (n = 170) and infants aged 0–2 years (n = 75).

Results: Non-judgmental Acceptance of Parental Functioning (NJAPF) and Emotional Awareness of the Child (EAC) predicted child internalizing problems. Overall, NJAPF was the most important unique predictor of parent outcomes. EAC, Emotional Awareness of the Self, Emotional Non-reactivity in Parenting and Compassion for the Child were also unique predictors, albeit with some differences between mothers of children and mothers of infants.

Conclusions: Mindful parenting may reduce child internalizing problems by improving parental emotion regulation or reducing parents' unhelpful beliefs or behaviors. Mindful parenting programs for families of children with internalizing problems should focus on developing parents' ability to be non-judgmental regarding their own functioning as a parent. Families may also benefit from programs being adapted to more specifically meet the different needs of parents of infants and older children.

Introduction

Mindful parenting is the process of parenting with non-judgmental, moment to moment awareness (Kabat-Zinn & Kabat-Zinn, 1997). Engaging in this process enhances parents' understanding of their child's experiences and needs, their ability to parent kindly (Kabat-Zinn & Kabat-Zinn, 2021) and in a manner that facilitates their longer-term parenting goals (Duncan et al., 2009). More mindful parents are less likely to react to challenging parenting situations in ways that reflect negative, automatic patterns of interaction between parent and child, which may be harmful to the parent-child relationship (Dumas, 2005). Attending a mindful parenting program (MPP) increases parents' tendency to be mindful in their parenting (Meppelink et al., 2016). MPPs appear to reduce parenting stress (Ferraioli & Harris, 2013). They may also reduce child externalizing and internalizing problems (Lo et al., 2017b; Ridderinkhof et al., 2017), even when mindfulness training is provided to parents only (Burgdorf et al., 2019).

However, the mechanisms through which mindful parenting might improve outcomes for children are not yet well understood. Amongst families where all or the majority of children had a primary externalizing disorder, reductions in parenting stress and over-reactivity after a MPP were found to predict reductions in child externalizing problems, but not internalizing problems (Burgdorf et al., 2019; Emerson et al., 2019a). In the same families, reductions in child internalizing problems were found to be only partially explained by a reduction in parental experiential avoidance (Emerson et al., 2019a). No other studies have investigated how MPPs might impact parent factors so as to reduce child internalizing problems. However, given that internalizing disorders are more prevalent in children than externalizing disorders (Polanczyk et al., 2015), and have a range of negative impacts on children and their families (Swan & Kendall, 2016), it would be helpful to develop a better understanding of the ways in which MPPs reduce child internalizing. It is possible, for

example, that MPPs might impact parent factors that can contribute to or maintain child internalizing problems, which could then lead to reductions in child internalizing.

Parental experiential avoidance refers to a parent's difficulty in tolerating their child's negative emotion and managing their own reactions to that emotion (Cheron et al., 2009). In situations eliciting negative emotions in the child, experiential avoidance may manifest in the parent as withdrawal from the situation, or over-protective or controlling behavior towards the child (Tiwari et al., 2008). It predicts child anxiety over and above the parent's own anxiety and controlling behavior (Emerson et al., 2019b). Modelling by a parent of such avoidant coping behaviors makes it more likely that their child will also avoid negative emotions, thereby contributing to, or maintaining, their internalizing problems (Fulton et al., 2014; Tiwari et al., 2008). As MPPs encourage parents to tolerate the difficult emotions they or their child experience, they may build parents' ability to use more active coping strategies, thus making it more likely that their child will also learn such strategies and thus decrease their internalizing over time. Parental experiential avoidance has been found by one study to decrease following a MPP (Emerson et al., 2019a). As that study principally involved parents of children with primary externalizing disorders, parents may have increased their ability to tolerate child emotions such as frustration or anger and manage their reactions to those child emotions. Given the moderately strong link between parental experiential avoidance and child internalizing (Emerson et al., 2019b), it is likely that MPPs would also improve parents' ability to tolerate negative child emotions such as sadness or anxiety, but this remains to be confirmed.

Like experiential avoidance, parents' cognitive emotion regulation style is related to child internalizing problems (Wald et al., 2018). Parents who model the use of more adaptive cognitive emotion regulation strategies have children who also use more adaptive strategies, which predicts lower child internalizing problems (Chan et al., 2016; Gunzenhauser et al.,

2014). General mindfulness-based therapy is thought to reduce adults' internalizing problems through improved cognitive emotion regulation (Curtiss et al., 2017; Gu et al., 2015). Since MPPs are closely based upon these general mindfulness therapies (Bögels & Restifo, 2013), MPPs may also improve parents' cognitive emotion regulation and thereby reduce child internalizing problems. Only one study has assessed whether changes in parental cognitive emotion regulation occur after parents attend a MPP. Racey et al. (2017) found that parents engaged in less rumination and showed greater decentring from thoughts, and that their adolescent children reported fewer depressive symptoms. However, both parents and adolescents followed parallel mindfulness programs in that study, so it is not known whether the improvements in parents' cognitive regulation, or improvements in some aspect of the adolescents' functioning, led to the reductions in adolescent depression.

Parent cognitions regarding their child's internalizing symptoms may also link mindful parenting and child internalizing problems. For example, parents of anxious children are more likely than others to believe that anxiety is harmful or that children should be protected from feeling anxious (Francis & Chorpita, 2009; Herren et al., 2013). These beliefs may lead parents to accommodate their child's anxiety, perhaps by allowing the child to avoid feared situations, thus preventing the exposure to those situations that would reduce the anxiety (Johnco et al., 2021; Settipani & Kendall, 2017). As MPPs encourage parents to decentre from and tolerate difficult thoughts (Bögels & Restifo, 2013), they may assist parents to refrain from accommodating their child's anxiety in response to their own unhelpful cognitions, thereby increasing the child's exposure and lowering anxiety over time. At present, there are no published studies investigating this hypothesis.

While there is little evidence available regarding parent variables that could explain the relationship between mindful parenting and child internalizing problems, they appear to differ from those linking mindful parenting and child externalizing problems (Burgdorf et al.,

2019; Emerson et al., 2019a). There is also limited evidence regarding the particular facets of mindful parenting that predict child internalizing problems or parent variables that might contribute to or maintain child internalizing problems. Less judgmental parenting has been found to predict lower child internalizing (Geurtzen et al., 2015; McGregor et al., 2020), but there do not appear to be any studies reporting on the relationship between mindful parenting facets and parental experiential avoidance, cognitive emotion regulation or beliefs or behaviors relating to child anxiety. However, identifying the facets of mindful parenting that are most relevant to child internalizing problems and related parent variables is important. This would allow MPPs to be tailored to more specifically focus on the parenting needs of children with internalizing problems, which may further improve their outcomes.

Finally, families might also benefit from MPPs being adapted to suit parents with children at particular ages or developmental stages, since children's parenting needs vary across different stages (Karavasilis et al., 2003). For example, to accommodate an infant's need for proximity (Flacking et al., 2016), parents of infants may need to focus on being attentive or compassionate with their child. On the other hand, as older children and adolescents become more emotionally reactive and begin to take more risks (Jaworska & MacQueen, 2015), parents of older children or adolescents may need to work on being less reactive themselves. Some studies have already used adapted programs. For example, the *Mindful With Your Baby* program, which includes the infants in most sessions, includes information for parents on mindfulness practice with a crying baby, making generalisation of skills in the home environment more likely (Potharst et al., 2017). However, at present there is no research indicating whether MPPs have different impacts on parent outcomes, depending on the child's age or developmental stage. This information would also be useful in terms of tailoring MPPs, to deliver improved results.

The aims of this study were to identify parent variables that might explain the relationship between mindful parenting and child internalizing problems, the facets of mindful parenting most closely related to those parent variables and to child internalizing problems, and whether those facets are different for parents of children and infants. To address these aims, the study used regression analyses to find which facets of mindful parenting uniquely predicted child internalizing problems, parental experiential avoidance, parent cognitive emotion regulation and unhelpful parent beliefs and behaviors relating to child anxiety. The regression analyses were done separately for parents of children and infants. We hypothesized that more mindful parenting would predict lower child internalizing problems, less parental experiential avoidance, use of more adaptive and less maladaptive cognitive emotion regulation strategies, and fewer unhelpful beliefs and behaviors regarding child anxiety. However, given the lack of existing research, we did not make hypotheses regarding the specific facets of mindful parenting that would be most relevant to the outcomes of interest.

Method

Participants and Procedures

The study procedures were approved by The University of Sydney Human Research Ethics Committee (approval numbers 183/2019 and 440/2019). As part of a broader study, a total of 990 participants were recruited from the community, using targeted Facebook advertisements. The advertisement contained a link to the information statement and consent form, hosted on the secure data collection website Qualtrics. People were invited to take part if English was their primary language and they were a parent, or acting in the role of parent, to at least one child aged 0–20 years. There were no other exclusion criteria. Participants with more than one child were asked to answer the parenting questions with regard to just one of their children.

From the 990 participants who provided informed consent, a subset of mothers (n = 245), were asked to complete demographic data, the Interpersonal Mindfulness in Parenting Scale (IMP; Duncan et al., 2009) and a set of measures of child internalizing problems and related parent variables. The data of the remainder of the parents was used as described in Chapter 3 of this thesis. For the n = 245 participants in this study, the age of the mothers of infants ranged from 26 to 53 years (M = 33.88; SD = 4.58) and their infants' mean age was 1.16 years (SD = 0.75). Mothers of children were aged between 27 and 56 years (M = 38.46, SD = 5.70), and the mean age of their children was 7.69 years (SD = 3.77). Table 1 contains further information on sample characteristics. Families of infants generally had fewer children, but there were no other demographic differences between the two groups of mothers.

Table 1

Sample characteristics (N = 245)

	Mothers of children *n*=170		Mothers of infants *n*=75		Difference between groups	
Characteristic	*n*	%	*n*	%	χ^2 *(df)*	ϕ_C
Child gender					0.89(2)	0.06
Male	76	44.7	34	45.3		
Female	92	54.1	41	54.7		
Other	2	1.2				
Parent relation to child					0.19(1)	0.03
Biological mother	165	97.1	72	96.0		
Other female caregiver	5	3.0	3	4.0		
Caregiver role					1.16(2)	0.07
Primary carer	127	74.7	59	78.7		
Equal carer[a]	41	24.1	16	21.3		
Secondary carer	2	1.2				
No. children in family					81.97(3)***	0.58
1	33	19.4	60	80.0		
2	86	50.6	12	16.0		
3	42	24.7	2	2.7		
≥ 4	9	5.3	1	1.3		

Table 1 continued

Characteristic	Mothers of children n=170		Mothers of infants n=75		Difference between groups	
	n	%	*n*	%	χ^2 *(df)*	ϕ_C
Parent highest level of education					5.53(2)	0.15
Post-graduate or Bachelor degree	126	74.1	65	86.7		
Associate degree or vocational training	22	12.9	3	4.0		
Secondary school or other	21	12.4	7	9.3		
Parent previous mental health diagnosis					2.88(1)	0.11
No	97	57.1	34	45.3		
Yes	73	42.9	41	54.7		
History of formal mindfulness practice					2.95(1)	0.11
Yes	75	44.1	42	56.0		
No	95	55.9	33	44.0		
Length of mindfulness practice					0.39(1)	0.06
< 1 year	30	41.7	15	35.7		
≥ 1 year	42	58.3	27	64.3		
Frequency of mindfulness practice					0.23(1)	0.05
< Monthly	63	87.5	38	90.5		
≥ Monthly	9	12.5	4	9.5		

Note. ϕ_C is Cramer's V effect size, where 0.1-0.3 is a small effect, 0.3-0.5 a moderate effect and >0.5 a large effect (Cohen, 1988).

[a]Equal carer is a parent who reports sharing the care of their child approximately equally with another person.

$^{*}p \leq .05$. $^{**}p \leq .01$. $^{***}p \leq .001$.

Measures

The parents completed the following questionnaires, along with two other questionnaires that were not included in the current study:

Demographics and Mindfulness Practice Questionnaire

Demographic information was collected from participants on the variables presented in Table 1. Participants were also asked whether they had ever engaged in formal mindfulness or other form of meditation or contemplative practice. Response options were one or more of mindfulness, yoga, tai chi, other (*participant to specify*) or none. Participants

who indicated some form of past formal practice were asked to indicate approximately how long they had engaged in that practice. For the purposes of the analyses in this paper, answers were dichotomized into "*less than 1 year*" and "*1 year or more*." For those currently practicing, the reported frequency of practice was dichotomized into "*less than monthly*" and "*monthly or more*." The data reported in this paper relate only to history, length and frequency of formal mindfulness practice.

Mindful Parenting

The Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007, Duncan et al., 2009) measures mindfulness in the parenting context. In this study, we used the 29-item version of the IMP, with the six scales suggested by de Bruin et al. (2014): Listening with Full Attention (LFA), Compassion for the Child (CC), Non-judgmental Acceptance of Parental Functioning (NJAPF), Emotional Awareness of the Child (EAC), Emotional Non-reactivity in Parenting (ENRP), and Emotional Awareness of Self (EAS). The items are rated using a 5-point Likert-type scale, where 1 = *Never true*, 2 = *Rarely true*, 3 = *Sometimes true*, 4 = *Often true* and 5 = *Always true*. A total score is calculated by summing the items, with 14 items (1, 5, 9–15, 17, 19, 23, 26, and 29) reverse coded. Higher scores indicate more mindful parenting. In this study, for mothers of children, Cronbach's alpha for each scale was: LFA .89, CC .85, NJAPF .82, EAC .86, ENRP .81, and EAS .80. For mothers of infants, alpha was: LFA .85, CC .79, NJAPF .85, EAC .63, ENRP .76, and EAS .73.

Child Internalizing Problems

The Strengths and Difficulties Questionnaire (SDQ; Goodman,1997) assesses child mental health in children aged 2–18 years. There are separate versions of SDQ for children aged 2-4 years, 5-10 years, 11-17 years and 18+ years. In all versions, five subscales relating to emotional problems, peer problems, behavioral problems, hyperactivity, and prosocial behavior are made up of five questions each, with 3-point response scales, where 0 = *Not*

true, 1 = *Somewhat true* and 2 = *Certainly true*. In this study, we report only on the Emotional Problems and Peer Problems subscales, combined into an Internalizing Problems scale, where a higher score indicates more problems. The Internalizing Problems scale has good convergent and discriminant validity and internal consistency in general community samples (Goodman et al., 2010). In this study, Cronbach's alpha for the Internalizing Problems scale was .70 (2-4 years), .71 (5-10 years) and .87 (11-17 years). No alpha was calculated for 18+ years, as there was only one mother of a child aged 18 years.

Mothers' Internalizing Problems

We used the Depression Anxiety Stress Scales, 21 item version (DASS-21; Lovibond & Lovibond, 1995) to measure parental distress. The DASS-21 is a self-report measure with three scales assessing the emotional states of depression, anxiety and stress. The items are answered on a 4-point Likert type scale, ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much or most of the time*). The scale scores are added to give a total distress score. Higher scores indicate greater distress. The psychometric properties of the DASS-21 have been reported to be excellent in several studies (e.g., Antony et al., 1998; Crawford & Henry, 2003). Cronbach's alpha in this study was .92 for parents of infants and .93 for parents of children.

Parental Experiential Avoidance

We used the 15-item Parental Acceptance and Action Questionnaire (PAAQ; Cheron et al., 2009) as a self-report measure of experiential avoidance in parenting. Items are rated on a 7-point scale from 1 = *Never true* to 7 = *Always true*, with higher scores indicating more experiential avoidance. Items 1, 5–7, 10, and 11 are reverse scored. The items are summed to create a parental experiential avoidance total score, which measures a parent's unwillingness to witness their child's negative feelings and their inability to manage their own reactions to those negative feelings. Data regarding the PAAQ's concurrent validity and adequate internal

consistency have been reported by Cheron et al. (2009). In this study, Cronbach's alpha was .83 for mothers of children and .81 for mothers of infants.

Cognitive Emotion Regulation

The Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski & Kraaij, 2006) is a 36-item self-report measure of nine cognitive emotion regulation strategies used by an individual in negative or unpleasant situations. The five subscales for generally adaptive strategies (Acceptance, Refocus on Planning, Positive Refocusing, Positive Reappraisal, Putting into Perspective) can be combined into an Adaptive scale, while the four subscales of generally maladaptive strategies (Self-blame, Blaming Others, Rumination, Catastrophizing) can be combined into a Maladaptive scale. Responses are given on a 5-point scale ranging from 1 = *(Almost) never* to 5 = *(Almost) always*. A higher scale score indicates more frequent use of the strategies represented by that scale. The CERQ is valid and internally consistent (Garnefski & Kraaij, 2006). In this study, internal consistencies for mothers of children were CERQ Adaptive .91 and CERQ Maladaptive .86, and for mothers of infants were CERQ Adaptive .92 and CERQ Maladaptive .88.

Parent Overprotection Beliefs

The Parental Attitudes, Beliefs and Understanding about Anxiety scale (PABUA; Wolk et al., 2016) is a 21-item self-report measure of a parent's beliefs and attitudes about their child's anxiety, consisting of three scales. The PABUA was used only for mothers of children, as there is evidence that overprotectiveness is not problematic for infants (Majdandžić, de Vente, Colonnesi, & Bögels, 2018). Overprotection measures parent beliefs about protecting their child from anxiety, with items such as "*It is important that I protect my child from feeling anxious.*" Approach measures beliefs regarding child autonomy and exposure to anxiety, for example "*A way to help my child feel less anxious is to encourage him/her to face his/her fears.*" Finally, Distress measures parent distress in connection with

their child's anxiety, for example "*It is hard for me to be with my child when he/she is nervous.*" Items 4, 12, 16, and 21, which form the Approach scale, are reverse scored. The items are answered on a 5-point scale, from 1 = *Strongly disagree* to 5 = *Strongly agree*, with higher scores indicative of less helpful beliefs about anxiety. The PABUA has good convergent and divergent validity (Wolk et al., 2016). Although Wolk et al. also found the PABUA had adequate to good internal consistency, in this study, Cronbach's alphas for the Approach (α = 0.41 for mothers of children) and Distress (α = 0.71 for mothers of children) scales were poor, so these scales were excluded from the analyses. The alpha for the Overprotection scale was .86 for mothers of children.

Parental Accommodation

The 5-item Parental Accommodation Scale (PAS; Meyer et al., 2018) measures the frequency of parental behaviors aimed at helping their child to lessen or avoid anxiety, with items such as "*I help my child avoid things or perform behaviors so that he or she feels better immediately*." The PAS was also used only for mothers of children. The items are answered on a 4-point scale ranging from 0 = *Never/almost never* to 3 = *Always/almost always*. Higher scores indicate more unhelpful accommodating behaviors. Meyer et al. (2018) demonstrated the PAS's convergent validity and good internal consistency. For mothers of children in this study, alpha was .77.

Statistical Analysis

We used SPSS version 26 to conduct a series of simultaneous multiple regression analyses to determine the unique contribution of individual IMP subscales to the prediction of scores on measures of child internalizing problems and related parent variables. For each of these variables, the data were first checked to ensure assumptions regarding normality of residual distribution, homoscedasticity and multicollinearity were met. For each dependent variable, P-P plots showed residuals to be normally distributed, scatterplots showed residuals

to be equally distributed across the relevant independent variable and all variance inflation factors were less than 10.

Results

Preliminary Analyses

IMP scores were higher for non-biological mothers (M = 113.38, SD = 10.64) than biological mothers (M = 103.34, SD = 13.79; $F(1, 243) = 4.15$, $p = .043$). In relation to family size, there were only ten mothers of 4 or more children, so we aggregated data from these mothers with the mothers of 3 children. IMP scores were higher for the families with fewer children ($F(2, 242) = 9.89$, $p < .001$). There were no other significant associations between IMP scores and demographic variables.

IMP scores were related to some aspects of mindfulness practice. Mothers with a history of mindfulness practice had slightly higher IMP scores (M = 105.68, SD = 13.37) than those with no history of practice (M = 101.82, SD = 13.98; $F(1, 243) = 4.87$, $p = .028$). Further, mothers who had practiced mindfulness for a year or more (M = 107.72, SD = 12.87) had higher scores than those who had practiced for less than a year (M = 101.73, SD = 13.48; $F(1, 158) = 7.98$, $p = .005$). There was no significant difference in IMP scores based on mothers' current frequency of practice.

Correlation Analyses

Table 2 contains the correlation coefficients for mindful parenting facets and child and parent outcomes. Mothers' internalizing symptoms (DASS) were significantly positively associated with child internalizing (SDQ Internalizing), so mothers' internalizing was included as a control variable in the regression analysis predicting child internalizing problems. Both mother and child internalizing symptoms were significantly positively associated with the parent outcomes, except for Adaptive cognitive emotion regulation (CERQ Adaptive). CERQ Adaptive was significantly negatively associated with mothers'

internalizing symptoms but was not related to child internalizing problems. In the regression analyses for parent outcomes in mothers of children, we controlled for both parent and child internalizing symptoms. Amongst mothers of infants, we controlled only for mothers' internalizing. There was insufficient SDQ Internalizing data to include this as a control variable for mothers of infants, as that data was available for only $n = 23$ infants aged 2 years and not for the remaining infants aged 0-1 year.

Correlations between demographic and mindfulness practice variables, child internalizing problems and the parent outcomes were also calculated to determine whether any demographic or mindfulness practice variables were candidates for inclusion as control variables in the regression analyses. These correlations are shown in Table 3. Demographic or mindfulness practice variables were included as control variables if the correlations between those variables and the child or parent outcome variables were significant, or where the correlation coefficient was .25 or more. We included control variables based on the size of the correlation coefficient as well as statistical significance because of the smaller sample size of mothers of infants ($n = 75$) compared to mothers of children ($n = 170$).

Table 2

Correlations between mindful parenting facets, child and mothers' internalizing problems, and parent outcomes

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1	LFA	-												
2	CC	.50***	-											
3	EAC	.35***	.47***	-										
4	NJAPF	.40***	.39***	.23***	-									
5	ENRP	.59***	.52***	.36***	.64***	-								
6	EAS	.48***	.63***	.42***	.40***	.66***	-							
7	Child internalizing	.-.21**	-.17*	-.29***	-.40***	-.32***	-.28***	-						
8	Mothers' internalizing	-.26***	-.17**	-.10	-.53***	-.38***	-.25***	.34***	-					
9	Parental experiential avoidance	-.36***	-.49***	-.28***	-.68***	-.58***	-.49***	.53***	.47***	-				
10	Adaptive CER	.10	.32***	.21***	.24***	.16**	.38***	-.15	-.16**	-.31***	-			
11	Maladaptive CER	-.24***	-.13*	.04	-.55***	-.39***	-.18**	.25***	.62***	.45***	-.10	-		
12	Overprotection beliefs	-.07	-.04	-.02	-.27***	-.11	-.08	.28***	.22***	.47***	-.22***	.27***	-	
13	Accommodation	-.22***	-.07	-.14*	-.36***	-.23***	-.17*	.38***	.30***	.51***	-.14*	.39***	.56***	-

Note. LFA is Listening with Full Attention; CC is Compassion for the Child; EAC is Emotional Awareness of the Child; NJAPF is Non-judgmental Acceptance of Parental Functioning; ENRP is Emotional Non-reactivity in Parenting; EAS is Emotional Awareness of the Self; Adaptive CER is adaptive cognitive emotion regulation; Maladaptive CER is maladaptive cognitive emotion regulation.

$^{*}p \leq .05$. $^{**}p \leq .01$. $^{***}p \leq .001$.

Table 3

Correlations between demographic and mindfulness practice variables, and child and parent outcomes

Demographic or mindfulness practice variable	Child internalizing[a]	Parental experiential avoidance	Adaptive CER	Maladaptive CER	Overprotection beliefs	Accommodation
	Mothers of children aged 3-18 years					
Parent age	-.01	-.09	-.08	**-.25****	-.14	**-.20***
Child age	**.24****	.02	-.06	**-.18***	-.10	-.07
Child gender[b]	.12	.11	-.05	.05	.14	**.22****
History of practice[c]	.07	-.03	.11	.11	-.08	.07
Length of practice[d]	-.14	-.15	.15	-.14	.08	.01
Frequency of practice[e]	.03	-.01	.17	.06	-.10	-.01
	Mothers of infants aged 0-2 years					
Parent age		-.17	-.02	.02		
Child age		**-.35****	.05	.01		
Child gender[b]		-.08	.08	.03		
History of practice[c]		-.13	.08	-.01		
Length of practice[d]		-.24	.17	-.01		
Frequency of practice[e]		.12	-.08	-.05		

Note. Variables whose correlations are in **bold** are controlled in the regressions; Adaptive CER is adaptive cognitive emotion regulation; Maladaptive CER is maladaptive cognitive emotion regulation.

[a]For SDQ Internalizing, this group comprises mothers of children aged 2-18 years (SDQ data not available for infants under 2 years, so SDQ Internalizing not controlled in regressions for mothers of infants); [b]0=females and 1=males (this analysis excludes *n*=2 children whose gender was reported as "other"); [c]0=no history of mindfulness practice and 1=some history of mindfulness practice; [d]0=< 1 year history of mindfulness practice and 1=one or more years history of mindfulness practice; [e]0=currently practicing less than monthly and 1=currently practicing monthly or more.

$^{*}p \leq .05$. $^{**}p \leq .01$.

Regression Analyses

Table 4 shows the results of the regression analysis for child internalizing problems (for children aged 2–18). In Model 1, child age and mothers' internalizing symptoms explained 16.8% of the variance, $F(2, 151) = 15.22$, $p < .001$). All facets of mindful parenting were then entered in Model 2, which explained a further 8.9% of the variance, $\Delta F(6, 145) =$

2.89, $p = .011$). Controlling for child age and mothers' internalizing, child internalizing problems were uniquely predicted by the NJAPF and EAC facets of mindful parenting.

Table 4

Regression analysis predicting child internalizing problems (n = 163)

	Model 1				Model 2			
Variables	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2
	$.17^{***}$				$.26^{***}$			
Child age		$.22^{***}$	2.99	.05		$.18^{*}$	2.41	.03
Mothers' internalizing		$.34^{***}$	4.51	.11		$.17^{*}$	1.97	.02
LFA						-.01	-0.10	.00
CC						.12	1.17	.01
EAC						$-.17^{*}$	-1.98	.02
NJAPF						$-.25^{*}$	-2.34	.03
ENRP						.01	-0.08	.00
EAS						-.11	-0.96	.00

Note. LFA is Listening with Full Attention; CC is Compassion for the Child; EAC is Emotional Awareness of the Child; NJAPF is Non-judgmental Acceptance of Parental Functioning; ENRP is Emotional Non-reactivity in Parenting; EAS is Emotional Awareness of the Self.

$^{*}p \leq .05$. $^{***}p \leq .001$.

In relation to regression analyses for parent outcomes, relevant control variables were entered in Model 1, then all mindful parenting facets were added in Model 2. Table 5 contains the results of each regression analysis for mothers of children. Table 6 contains the results for mothers of infants. For mothers of children, over and above mothers' and child internalizing symptoms and demographic covariates, all parent outcomes except adaptive cognitive emotion regulation had a unique negative association with NJAPF. Parental experiential avoidance was also uniquely negatively predicted by CC. Maladaptive cognitive emotion regulation was uniquely negatively predicted by ENRP and positively by EAC, and parental accommodation of child anxiety was uniquely negatively predicted by LFA.

Adaptive cognitive emotion regulation was uniquely negatively predicted by ENRP and positively by EAS.

For mothers of infants, no particular facet of mindful parenting appeared more relevant than others. After controlling for mothers' internalizing symptoms and demographic covariates, NJAPF negatively predicted parental experiential avoidance and maladaptive cognitive regulation, CC positively predicted adaptive and maladaptive cognitive emotion regulation, EAS negatively predicted parental experiential avoidance and adaptive cognitive regulation, and ENRP negatively predicted parental experiential avoidance.

Table 5

Regression analyses predicting parent outcomes, for mothers of children aged 3-18 years

	Model 1				Model 2						
Variables	R^2	β	*t*	sr^2	ΔR^2	ΔF	R^2	*F*	β	*t*	sr^2
Parental experiential avoidance (n = 148)	.41***				.22***	12.27	.63***	26.63			
Child internalizing		.40***	5.56	.14					.29***	4.60	.06
Mothers' internalizing		.38***	5.33	.13					.18**	2.82	.02
LFA									.04	0.44	.00
CC									-.24**	-3.03	.03
EAC									.07	1.08	.00
NJAPF									-.35***	-4.19	.05
ENRP									-.10	-1.00	.00
EAS									-.03	-0.30	.00
Adaptive CER (n = 168)	.04				.15***	3.89	.19***	3.61			
Child internalizing		-.09	-0.98	.01					.00	-0.01	.00
Mothers' internalizing		-.14	-1.50	.02					-.12	-1.21	.01
LFA									-.06	-0.52	.00
CC									.11	0.89	.01
EAC									.10	1.04	.01
NJAPF									.17	1.36	.01
ENRP									-.39**	-2.75	.05
EAS									.41***	3.38	.07

Table 5 continued

	Model 1				Model 2						
	R^2	β	*t*	sr^2	ΔR^2	ΔF	R^2	*F*	β	*t*	sr^2
Maladaptive CER (*n* = 168)	.42***				.14***	6.45	.56***	15.36			
Parent age		-.04	-0.45	.00					-.00	-0.04	.00
Child age		-.17*	-2.11	.02					-.11	-1.49	.01
Child internalizing		.08	1.05	.01					.05	0.76	.00
Mothers' internalizing		.58***	7.89	.28					.43***	5.90	.13
LFA									-.01	-0.08	.00
CC									-.07	-0.84	.00
EAC									.25***	3.33	.04
NJAPF									-.29**	-3.16	.04
ENRP									-.22*	-2.03	.01
EAS									.17	1.91	.01
Overprotection beliefs (*n* = 156)	.12**				.06	1.57	.18**	3.37			
Child internalizing		.23**	2.56	.04					.20*	2.14	.03
Mothers' internalizing		.19*	2.13	.03					.08	0.86	.00
LFA									-.09	-0.79	.00
CC									.07	0.55	.00
EAC									.12	1.24	.01
NJAPF									-.32**	-2.63	.05
ENRP									.14	0.97	.01
EAS									-.03	-0.21	.00
Accommodation (*n* = 143)	.26***				.08*	2.28	.33***	6.03			
Parent age		-.12	-1.50	.01					-.09	-1.14	.01
Child gender[a]		.16*	2.10	.03					.12	1.55	.01
Child internalizing		.30***	3.63	.08					.24**	2.77	.04
Mothers' internalizing		.22**	2.62	.04					.10	1.11	.01
LFA									-.20*	-1.96	.02
CC									.12	1.15	.01
EAC									-.03	-0.31	.00
NJAPF									-.32**	-2.87	.05
ENRP									.15	1.14	.01
EAS									.00	-0.02	.00

Note. LFA is Listening with Full Attention; CC is Compassion for the Child; EAC is Emotional Awareness of the Child; NJAPF is Non-judgmental Acceptance of Parental Functioning; ENRP is Emotional Non-reactivity in Parenting; EAS is Emotional Awareness of the Self.

[a]0=females and 1=males.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 6

Regression analyses predicting parent outcomes, for mothers of infants aged 0-2 years

	Model 1				Model 2						
Variables	R^2	β	*t*	sr^2	ΔR^2	ΔF	R^2	*F*	β	*t*	sr^2
Parental experiential avoidance (n = 64)	.22***				.43***	11.00	.65***	12.55			
Child age		-.36**	-3.10	.13					-.20*	-2.34	.04
Mothers' internalizing		.32**	2.82	.10					-.06	-0.57	.00
LFA									.18	1.81	.02
CC									-.15	-1.35	.01
EAC									.06	0.65	.00
NJAPF									-.43***	-3.97	.10
ENRP									-.24*	-1.97	.03
EAS									-.29*	-2.33	.04
Adaptive CER (n = 74)	.02				.35***	5.82	.36***	5.24			
Mothers' internalizing		-.13	-1.12	.02					.07	0.60	.00
LFA									-.23	-1.88	.03
CC									.31*	2.36	.06
EAC									.00	-0.02	.00
NJAPF									.23	1.74	.03
ENRP									-.11	-0.75	.01
EAS									.40**	2.64	.07
Maladaptive CER (n = 74)	.46***				.11*	2.71	.57***	12.11			
Mothers' internalizing		.68***	7.73	.46					.50***	5.11	.18
LFA									.02	0.19	.00
CC									.28**	2.53	.04
EAC									.03	0.27	.00
NJAPF									-.29**	-2.63	.05
ENRP									-.09	-0.71	.00
EAS									-.19	-1.53	.02

Note. LFA is Listening with Full Attention; CC is Compassion for the Child; EAC is Emotional Awareness of the Child; NJAPF is Non-judgmental Acceptance of Parental Functioning; ENRP is Emotional Non-reactivity in Parenting; EAS is Emotional Awareness of the Self.

[a]0=less than 1 year history of mindfulness practice, 1=one or more years history of mindfulness practice.

*$p \leq .05$

Discussion

The aim of this study was to identify whether parental experiential avoidance, cognitive emotion regulation and unhelpful beliefs and behaviors regarding anxiety might explain the relationship between mindful parenting and child internalizing problems, which facets of mindful parenting are most closely associated with child internalizing and those parent variables, and whether those facets differ for parents of children and infants. As expected, mindful parenting predicts child internalizing problems, and parents' experiential avoidance, cognitive emotion regulation and unhelpful beliefs and behaviors relating to child anxiety, amongst mothers of children. For mothers of infants, the hypotheses were also supported, as mindful parenting predicts experiential avoidance and cognitive emotion regulation. Several facets of mindful parenting are uniquely associated with child internalizing problems, and with the related parent outcomes, with some differences across mothers of children and infants.

Child internalizing problems were uniquely predicted by the NJAPF and EAC facets when all other variables, including mothers' internalizing symptoms, were held constant. Children have fewer internalizing problems if their mothers are less judgmental about their own parental functioning and have more emotional awareness regarding their child. Previously, adolescents have been found to be less anxious and depressed if their parents are less judgmental about themselves as parents (Geurtzen et al., 2015), so the present results confirm this relationship in mothers of a wider age range of children. Emotionally competent parents, including those who are more emotionally aware and who model helpful self-regulation strategies, such as non-judgment or acceptance, provide more opportunities for their children to learn these behaviors (Morris et al., 2017). In turn, children with better emotion regulation skills have fewer internalizing problems (Suveg et al., 2011). However, the present results contrast with the finding by Meppelink et al. (2016) that mindful parenting

1503 does not predict child internalizing problems. The use in that study of the overall mindful
1504 parenting scale, rather than the individual scales, might explain the different results. In this
1505 study, the scales other than NJAPF and EAC had negligible to very small associations with
1506 child internalizing, so the aggregation of the individual scales in Meppelink et al. may have
1507 obscured any relationship. It should also be noted that the cross-sectional nature of the data
1508 means that alternative explanations are possible. For example, having an anxious child who
1509 avoids certain activities like engaging in sports or interacting with other children at school or
1510 in social settings may cause a parent to negatively judge their abilities as a parent.

1511 There were similarities between predictors of parent outcomes for mothers of children
1512 and infants. After controlling for relevant demographic covariates and mothers' internalizing
1513 symptoms, and also for child internalizing symptoms in the case of mothers of children,
1514 NJAPF was the facet of mindful parenting that most strongly predicted parental experiential
1515 avoidance and maladaptive cognitive emotion regulation for both groups of mothers. Mothers
1516 are less avoidant of negative emotion and rely less on maladaptive strategies such as
1517 rumination, catastrophising and blaming, if they are less judgmental regarding their own
1518 parenting. The importance of self-judgment as a predictor could indicate that mothers are
1519 interpreting challenging parenting situations as reflecting upon the adequacy of their
1520 parenting. Parents who judge themselves harshly, or who believe they are less competent
1521 parents, experience more stress and view such situations as more problematic and difficult to
1522 resolve (Bloomfield & Kendall, 2012), making it more likely that they will use unhelpful
1523 strategies in their parenting. On the other hand, parents who don't judge themselves so
1524 harshly may be more open to allowing the experience of psychological distress in difficult
1525 parenting situations, framing it as a normal emotional reaction that occurs in parents and
1526 children in the course of childhood and parenting, rather than an indicator that something is

wrong. This explanation is consistent with evidence that mothers' sense of competence as a parent improves after they complete a MPP (Potharst et al., 2018b).

Greater emotional self-awareness was the strongest predictor of the use of adaptive cognitive emotion regulation strategies, for both groups of mothers. Several of the adaptive cognitive strategies involve making conscious decisions about whether a difficult situation can be viewed, or coped with, in a constructive way, such as by viewing the positive aspects of the situation or maintaining a broader perspective on the issue. Mothers who are more emotionally self-aware may be more likely to make conscious decisions to use these constructive strategies in difficult situations because they can recognise their emotional state, and the potential negative impact of the situation on their own or their child's emotional state, before responding. The capacity to understand and reflect upon one's own emotional state is likely to underlie the ability to understand the emotional state of others and make conscious decisions regarding appropriate parenting behaviors (Gallup & Platek, 2002; Potharst et al., 2020).

There were also differences in the prediction of parent outcomes, for mothers of children and infants. Mothers of children are less experientially avoidant in their parenting if they have more compassion for their child, whereas mothers of infants are less avoidant if they are more emotionally self-aware and emotionally non-reactive. This difference could reflect that mothers of infants generally understand that infants have a limited capacity to soothe themselves and must rely on parents to regulate their emotions (Rutherford et al., 2015). To the extent that mothers of infants understand this, they are more likely to believe that they cannot ignore or otherwise avoid their infants' distress. On the other hand, older children have a greater capacity for self-regulation. They will also have a broader range of reasons to experience negative emotion, such as academic or social concerns, which may be harder for parents to address than the relatively simple needs of infants. Parents with greater

compassion for their child are less likely to avoid the negative emotion that can be associated with parenting, because compassion involves engaging with another's suffering instead of avoiding it (Carona et al., 2017).

For mothers of children, being more emotionally aware regarding the child and more emotionally reactive predicted greater use of maladaptive cognitive emotion regulation strategies. If parents are very aware of their child's emotional difficulties, this may increase the level of stress they experience as a parent, which increases parental reactivity (Venta et al., 2016). Highly reactive parents may use more maladaptive regulation strategies, such as blaming, because the automatic nature of their reactions precludes them from considering more helpful ways of responding or coping with the situation (Dumas, 2005). This elevated reactivity to child behavior is probably more relevant for parents of children than infants because children's greater agency increases the likelihood that parents will make negative attributions regarding their behavior (Nelson et al., 2013), increasing the likelihood of them responding unhelpfully (Crouch et al., 2017). In contrast, for mothers of infants, being more compassionate with their infant predicted greater use of maladaptive strategies. There are numerous challenges for parents to manage during their child's infancy, such as crying, sleeping and feeding difficulties (Östberg & Hagekull, 2000), so it may be that kind, caring parents understand that their infant has little control over these issues and instead blame themselves for these difficulties.

Finally, mothers of children are less likely to believe they need to protect their child from anxiety and are less likely to accommodate their child's anxiety, if they are less judgmental regarding their own functioning as a parent. However, mothers of children who understand that child anxiety is not indicative of a parenting failure, but a normal emotion that everyone will experience at times, will probably not feel so compelled to guard against anxiety in their child. As noted above, we did not measure these beliefs or behaviours

amongst mothers of infants but they are not likely to be so relevant. For parents of infants, typical infant fears such as hesitance around strangers, may be seen as developmentally normal rather than due to parenting failures. While parental overprotectiveness or accommodation is generally seen as a risk factor for child anxiety (Yap et al., 2014), there is evidence that this is not the case for infants (Möller et al., 2015).

Clinical Implications

The findings discussed above have clinical implications. First, the present results showed mindful parenting was only weakly related to having a history of formal mindfulness practice and the length of that practice history, and neither practice history nor frequency of current practice correlated meaningfully with child internalizing symptoms or parent outcomes. This is consistent with existing evidence that while mindful parenting and general, trait mindfulness are correlated, it is the increases in mindful parenting, and not general mindfulness, that predict improvements in child outcomes (Meppelink et al., 2016; Neece, 2014). While there are currently no explicit comparisons of the benefits of mindful parenting and general mindfulness programs, it appears that families managing child psychopathology may benefit more from mindful parenting programs, that are targeted specifically toward parenting difficulties, rather than from general mindfulness programs.

Second, mindful parenting interventions may be useful in treating child internalizing problems. While cognitive-behavioral therapy (CBT) enjoys empirical support as a generally effective treatment for child internalizing problems such as anxiety disorders (MacPherson & Fristad, 2014), the remission rate of 59% across these disorders (James et al., 2013) indicates that a substantial proportion of children do not lose their diagnoses after CBT. For example, it is less helpful for children whose parents are experiencing their own stressors or underlying emotion regulation deficits (Aldao et al., 2010; Compton et al., 2014). There is therefore a need for adjunct treatments that can address parent factors that hinder child or family CBT, or

for alternative treatment approaches for families who do not wish to rely on CBT. Mindful parenting programs have previously been found to reduce parent psychopathology (Bögels et al., 2014). The present results have also shown that mindful parenting predicts parent emotion regulation strategies related to child internalizing problems, and parent beliefs and behaviors relating to child anxiety. While it remains to be shown that a mindful parenting program will reduce problematic emotion regulation strategies, beliefs or behaviors, this study suggests that a mindful parenting program might address these difficulties and therefore improve child internalizing outcomes.

Finally, the nature of the child's difficulties and their age should be considered when designing and offering mindful parenting interventions to families. In relation to child difficulties, mindful parenting interventions have, to date, largely been delivered to parents of children with externalizing problems, who tend to experience greater reactivity toward their children as a result of elevated parenting stress (Bögels et al., 2010). In this study, NJAPF was the strongest predictor of child internalizing problems and most of the parent outcomes related to child internalizing. Accordingly, in mindful parenting interventions for families of children with internalizing problems, it may be more important to focus on building non-judgmental acceptance of parenting than on non-reactivity. Regarding child age, the present results showed that although NJAPF was the most important predictor of child and parent outcomes overall, and that EAS, ENRP and CC were also relevant to parent outcomes for both mothers of children and infants, there were some differences between the two groups of mothers. NJAPF was slightly less important as a predictor of outcomes for mothers of infants, and EAC was relevant only for mothers of children. Higher CC was problematic, in that it was linked to greater use of maladaptive cognitive regulation, only for mothers of infants. Although non-judgmental acceptance of parenting, emotional awareness of the self and child and compassion for the child should be targeted in programs for all parents of children with

internalizing difficulties, some tailoring of programs to acknowledge these differences between parents of infants and older children might deliver additional benefits.

Limitations

In this study, we have identified several parent variables that might explain the relationship between mindful parenting and child internalizing problems, namely parental experiential avoidance, cognitive emotion regulation, and beliefs and behaviors relating to child anxiety. However, as our data are cross-sectional, no conclusions can be drawn about the direction of effect between mindful parenting facets and these parent variables. Future studies are required to address the question of directionality. This could be done experimentally, by testing whether these parent variables change following a MPP, or by conducting path analyses with longitudinal data. We also used a community-recruited sample for this study, for convenience. Conducting the same analysis with parents of children who have been diagnosed with internalizing disorders may give a more reliable indication of whether the investigated parent outcomes explain the relationship between mindful parenting and child internalizing problems.

Conclusion

Mindful parenting is associated with child internalizing problems and with parental experiential avoidance, cognitive emotion regulation and unhelpful parent beliefs and behaviors relating to child anxiety. Several facets of mindful parenting emerged as unique predictors of child internalizing problems and these parent variables, after controlling for relevant demographic variables and the internalizing symptoms of children and mothers. Non-judgmental acceptance of parental functioning and emotional awareness of the child were important in relation to child internalizing. In relation to parent outcomes, non-judgmental acceptance of parental functioning was the most important predictor overall. While most facets of mindful parenting were uniquely predictive of parent outcomes for both

mothers of children and infants, there were some differences between the two groups, suggesting that child age should be considered when offering programs to parents. Mindful parenting programs have the potential to help families of children with internalizing problems, such as those who are not currently well-served by CBT, potentially by improving parental emotion regulation or reducing unhelpful anxiety-related beliefs or behaviors.

CHAPTER FIVE. Feasibility study

A mindful parenting program for parents concerned about child internalizing problems: A randomised controlled feasibility study

Chapter 5 presents a randomised controlled feasibility study comparing an 8-week mindful parenting program to a waitlist control, for community-recruited parents concerned about their child's internalizing symptoms.

This Chapter reproduces the text from the published article referred to below (Appendix D1), with minor amendments made to the published version to ensure that the format of Chapter 5 is consistent with the layout of this thesis.

Burgdorf, V., Abbott, M. J., & Szabó, M. (2022). *A mindful parenting program for parents concerned about child internalizing problems: A randomised controlled feasibility study. Mindfulness, 13*, 430-448.

Abstract

Objectives: This study sought to establish four aspects of feasibility for a mindful parenting program: demand for the program from parents with concerns regarding their child's internalizing problems, acceptability of the program to those parents, preliminary efficacy, and the likelihood of successful expansion of the program to the intended population.

Methods: The study was a pilot, randomized controlled trial comparing a mindful parenting program to waitlist. Participants were parents ($N = 25$) of children aged 3-18 years, with self-reported concerns regarding their child's internalizing problems, recruited from the community. Demand was assessed using recruitment and adherence rates. Acceptability was assessed using parent-reported usefulness. Preliminary efficacy was assessed using parent reports of child internalizing problems, mindful parenting, parenting stress, cognitive emotion regulation, parental experiential avoidance and parent beliefs about child anxiety. Intervention group parents also provided weekly in-session data on coping in stressful parenting situations. The likelihood of successful expansion was assessed using qualitative feedback on whether and how the program had helped parents manage child internalizing problems, particularly anxiety.

Results: Feasibility was established for the four aspects assessed. The program was well-attended and acceptable to parents. Moderate to large effects were found in favour of the intervention group for most parent and child outcomes. Weekly data showed improved coping in difficult parenting situations. Qualitative feedback suggested that parents believed that increased acceptance and empathy had helped them cope with child internalizing problems.

Conclusions: Mindful parenting programs may assist parents of children with internalizing problems to manage parenting stress and emotionally regulate themselves, even in difficult

parenting moments. They may also reduce child internalizing problems, through improved parental emotion regulation, and greater acceptance of and empathy for their child.

Introduction

Parenting stress occurs when a parent believes that the demands of parenting outweigh their current resources to manage those demands (Östberg et al., 2007). It is associated with a range of negative outcomes, including more emotional problems in parents (Skreden et al., 2012), more social, emotional and behavioral problems in children (Anthony et al., 2005), and more negative parenting behaviors (Venta et al., 2016), which contribute to poorer outcomes for the child (Pinquart, 2017). While raising a child is stressful for most parents at least some of the time, the parenting stress literature has focused upon parents of children with externalizing problems, such as rule-breaking, aggressive or other disruptive behavior (Achenbach & Rescorla, 2001), given the strong link between parenting stress and such problems (Barroso et al., 2018). Sources of stress for these parents include child behavioral problems and parent perceptions regarding their child's emotional lability and negativity (Baker et al., 2003; Costa et al., 2017).

Despite there also being a moderately strong association between parenting stress and child internalizing problems (Barroso et al., 2018), such as symptoms of anxiety or depression (Achenbach & Rescorla, 2001), this connection with child internalizing has received less research attention (Rodriguez, 2011). The less overt nature of internalizing problems may mean the needs of the families managing these problems are more easily underestimated or overlooked (Clarke-Stewart et al., 2003; Rodriguez, 2011). However, internalizing disorders are amongst the most common types of mental health conditions in children (Polanczyk et al., 2015), with numerous negative outcomes for affected children (Swan & Kendall, 2016). Child internalizing problems also negatively impact families by adding to parenting stress, including by contributing to parental beliefs that the child has a difficult temperament (Fernandes, et al., 2020), worries about the child's ability to cope, and disappointment about the child not meeting expectations (Costa et al., 2006). Further, as well

as parenting stress being an outcome of child internalizing, longitudinal evidence shows parenting stress is a risk factor for later child internalizing problems (Stone et al., 2016). Parents of children with internalizing difficulties should therefore be supported to reduce or manage their stress levels for their own well-being, and to reduce the risk of contributing to their child's internalizing problems.

One factor that helps parents to cope better with stress is parental mindfulness (Campbell et al., 2017). Mindfulness in parenting involves a parent paying moment-to-moment, non-judgmental, non-reactive attention to their child (Kabat-Zinn & Kabat-Zinn, 1997), which helps them to regulate their emotional experiences as a parent and their behaviors with their child (Duncan et al., 2009). A more mindful parenting style can be developed through mindfulness training (Meppelink et al., 2016). Mindful parenting programs (MPPs) are typically based on mindfulness-based stress reduction (MBSR; Kabat-Zinn et al., 1992) and mindfulness-based cognitive therapy (Segal et al., 2013) programs, but concentrate on particular challenges faced by parents (Bögels et al., 2014). These include being aware and accepting of the "whole" child, rather than focusing on perceived weaknesses or problems, tolerating negative thoughts and emotions regarding the child, perspective-taking and empathizing with the child, and being compassionate towards the child and the self as a parent (Bögels & Restifo, 2013).

Numerous studies have investigated the benefits of MPPs over the past decade. A recent meta-analysis of these studies found that MPPs reduce parenting stress and are associated with reductions in children's internalizing and externalizing problems (Burgdorf et al., 2019). However, most clinical programs have been run for parents of children with a primary externalizing diagnosis (for example, Jones et al., 2018). Only one published study has catered specifically for parents of children with a primary internalizing diagnosis (Racey et al., 2017). As this study did not assess parenting stress, it is not known whether MPPs

reduce parenting stress specifically for parents of children with primary internalizing problems. Further, although the adolescents in Racey et al. (2017) reported fewer internalizing symptoms after the intervention, they attended a separate mindfulness course in parallel to the MPP attended by their parents, so it is not known whether their symptoms improved as a result of their own program or the MPP. Accordingly, with the exception of Racey et al., the published literature has assessed internalizing problems only as comorbid symptoms in groups of children where the majority of primary diagnoses were for externalizing disorders. More targeted research is needed to confirm whether MPPs reduce parenting stress and child internalizing problems in families whose primary concern is child internalizing.

Children with primary internalizing problems have a genetic and temperamental vulnerability to internalizing problems, which may be exacerbated by overprotective parenting (Edwards et al., 2010; Rapee, 2012). In contrast, some children with co-morbid internalizing problems tend to develop these as a result of their primary externalizing problems, for example when these lead to social rejection or academic problems (Willner et al., 2016). Given these different risk factors for primary and comorbid internalizing problems, MPPs could impact the internalizing problems of these two groups of children in different ways. However, the limited research regarding MPPs and child internalizing means that little is known about how mindful parenting might reduce child internalizing problems. According to Burgdorf et al.'s (2019) meta-analysis of MPPs, the majority of which related to children with primary externalizing disorders, reductions in comorbid internalizing problems were not predicted by reductions in parenting stress. Instead, Emerson et al. (2019a) found they were partially explained by reductions in parental experiential avoidance, defined as a parent's difficulty experiencing their child's negative feelings and managing their own reactions to those negative feelings (Tiwari et al., 2008). Correlational data from community-recruited

families has shown that mindful parenting is related to child internalizing problems and parental experiential avoidance, cognitive emotion regulation and parental beliefs and behaviors relating to child anxiety (Burgdorf & Szabó, 2021), which are each related to child internalizing symptoms (Drake & Ginsburg, 2012; Wald et al., 2018). Experimental research showing improvements in these parent variables following a MPP would provide further evidence of how more mindful parenting could explain reduced child internalizing in families of children with primary internalizing concerns.

As parent-only MPPs have not been studied specifically in families of children with internalizing problems, it is not known whether these programs will be viewed favorably by their parents. Parents of children who experience anxiety tend to be distressed by and avoidant of both their own and their child's negative emotion (Tiwari et al., 2008), and to believe that shielding their child from negative experiences and distress is beneficial (Kiel et al., 2019; Rousseau & Scharf, 2017). They may, therefore, not wish to change any avoidant or (over)protective behavior associated with these beliefs by attending a MPP, which encourages parents to remain in contact with the negative emotions both of and relating to their child (Bögels & Restifo, 2013). Similarly, the tendency for parents of children suffering from depression to emotionally withdraw from their child (Yap et al., 2014) may limit parents' desire or motivation to engage in a treatment program which emphasizes emotional connection. Further, this study proposed to recruit parents from the community, since baseline parenting stress is the same for parents of children with a mental health diagnosis and help-seeking parents without a diagnosis (Potharst et al., 2018a). As parenting programs in non-clinical settings can have high attrition rates (Axford et al., 2012), there is also uncertainty about what proportion of enrolled parents would complete the program. Prior to running a full-scale study, it would be prudent to evaluate the feasibility of a MPP for parents recruited in the community, with concerns regarding their child's emotional wellbeing.

The objective of this study was therefore to investigate several aspects of the feasibility of a mindful parenting program for parents with concerns regarding their child's internalizing problems. Despite the uncertainty, we hypothesized that a mindful parenting program for parents with concerns regarding their child's internalizing problems would be feasible. Specifically, we expected that help-seeking parents would attend the program and find it acceptable. We also expected that the intervention group would report moderate improvements in parenting stress, parental experiential avoidance, cognitive emotion regulation and beliefs about child anxiety, small improvements in child internalizing problems, and that differences between the intervention and control groups would favour the intervention group. Last, we expected that parents would report that the program helped them manage child internalizing symptoms, including anxiety, through improved emotional awareness and acceptance.

Method

Participants

Participants were 25 parents who wished to take part in a pilot randomized controlled trial comparing an 8-week mindful parenting program to waitlist. The sample size was based on the recommendations made by Whitehead et al. (2016) for an 80% powered main trial with two-sided 5% significance, where the standardised effect sizes are expected to be small to medium. Individuals could be included in the study if they were a parent (or acting in the role of parent) with a child aged 3 to 18 years, whose primary self-reported concern regarding their child was the child's internalizing symptoms. Exclusion criteria were: (1) parent's inadequate mastery of the English language; (2) parent or child participating in another parenting course or psychological therapy for managing child or parent well-being; (3) parent having organic brain damage; (4) parent having current or historic psychotic or bipolar disorder; (5) parent having current or recent (within last year) substance dependence; (6)

parent having significant interpersonal difficulties (such as anti-social behavior); (7) parent at current, moderate to high risk of self-harm or suicide; (8) current substantial risk of abuse of any child in the family; or (9) intellectual disability in the child regarding whom assistance was sought. Intervention group parents were significantly older (M = 42.45 years, SD = 4.85) than waitlist parents (M = 37.75 years, SD = 4.67) ($t(21) = 2.37$, $p = .03$). There was no difference in the mean age of children of parents in the intervention (M = 6.27 years, SD = 1.95) and waitlist (M = 6.00 years, SD = 3.13) groups. Table 1 contains additional demographic information regarding the participants. There were no significant differences between the parent groups on these demographic variables, or on pre-program scores for any of the outcome variables.

Table 1

Demographic characteristics of participants

Characteristic	Intervention group (n = 11)		Waitlist group (n = 12)		Group difference
	n	%	n	%	χ^2 (df)
Child gender					0.38 (1)
Female	6	54.5	5	41.7	
Male	5	45.5	7	58.3	
Parent relation to child					0.00 (1)
Mother	10	90.9	11	91.7	
Father	1	9.1	1	8.3	
Caregiver role					1.23 (2)
Primary carer	6	54.5	9	75.0	
Equal carer[a]	4	36.4	2	16.7	
Secondary carer	1	9.1	1	8.3	
No. of children in family					2.04 (2)
1	1	9.1	4	33.3	
2	7	63.6	6	50.0	
3	3	27.3	2	16.7	
Parent cultural identity					2.96 (3)
Australian	10	90.9	10	83.3	
UK	0	0	1	8.3	
Eastern European	0	0	1	8.3	
Middle Eastern	1	9.1	0	0	

Table 1 continued

Characteristic	Intervention group (n = 11)		Waitlist group (n = 12)		Group difference
	n	%	*n*	%	χ^2 (*df*)
Parent highest level of education					.01 (2)
Post-graduate or Bachelor degree	9	81.8	10	83.3	
Associate degree or vocational training	1	9.1	1	8.3	
Secondary school or other	1	9.1	1	8.3	
Parent previous mental health diagnosis					3.16 (1)
Yes	0	0	3	25.0	
No	11	100	9	75.0	
History of mindfulness practice					0.52 (1)
Yes	3	27.3	5	41.7	
No	8	72.7	7	58.3	
Length of mindfulness practice					.04 (1)
< 1 year	2	66.7	3	60.0	
≥ 1 year	1	33.3	2	40.0	
Frequency of mindfulness practice					.04 (1)
< monthly	2	66.7	3	60.0	
≥ monthly	1	33.3	2	40.0	

Note. [a]Equal carer is a parent who reports sharing the care of their child approximately equally with another person.

Procedure

Ethical approval (793/2019) was obtained from the Human Research Ethics Committee of The University of Sydney. Informed written consent was obtained from all participants in the study. The CONSORT 2010 Statement: Extension to Randomized Pilot and Feasibility Trials (Eldridge et al., 2016) was used to guide the reporting of this trial. Study advertisements were distributed to potential participants in January 2020, either by email to parents who had previously asked to be notified by the University about mindfulness programs for parents, or on Facebook. The Facebook advertisement was displayed over a 10-day period, to individuals located within the metropolitan area of Sydney, Australia and interested in the topic areas of "Motherhood", "Fatherhood", "Parenting", "Family", or "Parents". The advertisements directed potential participants to a registration of interest form

on the data collection website Qualtrics, where they could provide contact details and access the participant information statement and consent form. Of the 102 individuals who registered their interest in participating, 56 were able to be contacted by telephone and assessed for eligibility. Of these individuals, 25 were eligible, able to attend the program on the scheduled dates, and provided consent to participate (see Figure 1). To ensure allocation concealment during randomisation, these 25 participants were randomly allocated on a 1:1 basis to the intervention (n = 12) or waitlist control (n = 13) groups using the website random.org.

The program delivered in this study was adapted from the 8-week x 3-hour mindful parenting group program developed for parents experiencing parenting stress by Bögels and Restifo (2013). The adapted program consisted of eight weekly 2-hour group sessions: (1) Automatic pilot, (2) Beginner's mind, (3) Reconnecting with the body, (4) Responding versus reacting, (5) Parenting patterns and schemas, (6) Conflict and parenting, (7) Love and limits, and (8) Are we there yet? A mindful path through parenting. Each session consisted of an overview of the session theme/s, group discussion of home practice exercises, formal meditation practices followed by a group inquiry regarding each practice, and mindfulness/visualization exercises and discussions related to the week's theme. The program was run at 6.00 – 8.00 p.m. on Tuesdays during school term, from February to April 2020. The first five sessions were delivered face-to-face at The University of Sydney, and the remaining three sessions were conducted online using Zoom, due to the closure of the University campus during the COVID-19 pandemic. The program was offered to the control group after all data collection was completed. The program was facilitated by two of the authors, a registered clinical psychology registrar (VB) and a registered clinical psychologist (MS). Both authors have experience working with parents and in group therapy, have a

personal mindfulness practice, and have completed mindful parenting teacher training with Professor Susan Bögels at the University of Amsterdam.

Some adaptations were made to the Bögels and Restifo (2013) program. Because the program was being run for parents concerned about their child's emotional well-being rather than behavioral problems, in exercises which asked parents to visualize a stressful parenting situation, we used examples such as a child with anxiety refusing to separate from a parent. The weekly session length was reduced from three to two hours, as parents were recruited from the community rather than treatment clinics. We did this by shortening several formal meditation practices, including body scans and sitting meditations, and omitting the yoga practices. Facilitating the final three sessions of the program via Zoom also required some changes to program content and mode of delivery. These changes included omitting the walking meditations, using the Zoom "share screen" function as a whiteboard for parent input during group exercises, and the "breakout rooms" function for parents to work in pairs. For body scans and a standing meditation, some parents chose to turn off their camera during the practice. Apart from these changes, the online sessions were run as similarly as possible to the face-to-face sessions, including the presence of facilitators at all times. Parents were encouraged to act as if they were together in the same room with the facilitators and other group members. For example, parents were asked to find a private space for the sessions, where they could participate in meditation exercises and group discussions free from interruptions from other family members.

Measures

Feasibility

Bowen et al. (2009) outlined eight potential areas of focus for feasibility studies. We used four of these areas to assess feasibility in this study: Demand, Acceptability, Limited-efficacy testing and Expansion. Demand relates to the likely use of an intervention by the

intended population. We assessed this for parents whose primary concern regarding their child was their internalizing symptoms, through: (a) recruitment rates, calculated as the proportion of parents who enrolled in the study (i) after the initial contact from the researchers, and (ii) after registering their interest in participating; (b) attendance rate, being the average attendance rate of parents over 8 sessions; (c) completion rate, being the proportion of parents completing at least 6 of the 8 sessions; (d) withdrawal rate, or the proportion of parents who withdrew from the study after randomization but before the start of the program; and (e) attrition rate, being the proportion of parents who began the program but did not attend at least 4 sessions.

Acceptability refers to the reactions of the participants to an intervention. We assessed acceptability by measuring parent perceptions of program usefulness, including in relation to the COVID-19 pandemic, based on the parent feedback form in Bögels and Restifo (2013). Parents responded to the questions (a) "Which group format did you prefer? (*Face-to-face*/*Online*); (b) "To what extent did the COVID-19 pandemic affect your ability to benefit from the program?" where 1 = *Very positive impact* to 7 = *Very negative impact*; (c) "How important has the training been for you, overall?" on a scale of 1 to 10 (*1 = Not useful at all, 10 = Extremely useful*); (d) "Do you feel you got something of lasting value or importance as a result of doing this program?" (*yes*/*no*) and (e) "Would you recommend the program to friends or family members?" (*yes*/*no*).

Limited-efficacy testing refers to obtaining preliminary evidence of program effects with a small sample, in order to estimate sample and effect sizes for a full-scale trial. We obtained preliminary evidence of effects through parent self-reports on the outcome measures described below. Except where otherwise indicated, all self-report questionnaires were completed by parents online, through Qualtrics. The demographic and mindfulness practice information contained in Table 1 was collected from all parents one week prior to the

program. The other questionnaires were completed by all parents one week prior to the program (pre-program), after the fourth session (mid-program), upon completion (post-program), and two months after completion (follow-up). The data on weekly coping with parenting stress was collected from intervention group parents weekly, in-session.

Expansion relates to the likelihood of successfully using an existing intervention with a new population or in a different setting. We did this by collecting qualitative feedback from parents regarding whether and how the program had helped them.

Mindful Parenting

The Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007, Duncan et al., 2009) assesses mindful parenting. The items are rated using a 5-point Likert scale, ranging from 1 = *Never True* to 5 = *Always True*. Fourteen items (1, 5, 9-15, 17, 19, 23, 26, 29) are reverse coded, and higher scores indicate more mindful parenting. We used the 29-item, six-factor version of the IMP, which has the subscales Listening with Full Attention (LFA; "I rush through activities with my child without really being attentive to him/her"), Compassion for the Child (CC; "I am kind to my child when he/she is upset"), Non-judgmental Acceptance of Parental Functioning (NJAPF; "I tend to be hard on myself when I make mistakes as a parent"), Emotional Awareness of the Child (EAC; "It is hard for me to tell what my child is feeling"), Emotional Awareness of Self (EAS; "When I'm upset with my child, I notice how I am feeling before I take action"), and Emotional Non-reactivity in Parenting (ENRP; "I often react too quickly to what my child says or does") (Burgdorf & Szabó, 2021; de Bruin et al., 2014). A total score is calculated by summing all items. The IMP has demonstrated good convergent and divergent validity (Burgdorf & Szabó, 2021; de Bruin et al., 2014). Pre-program internal consistency (Cronbach's alpha) and reliability (McDonald's omega; see Hayes & Coutts, 2020 and McDonald, 1999) in the current sample was α=.72, ω=.72 for LFA, α=.90, ω=.91 for CC, α=.85, ω=.86 for NJAPF, α=.82, ω=.82 for

EAC, α=.81, ω=.83 for EAS, α=.80, ω=.83 for ENRP, and α=.93, ω=.92 for IMP total. Post-program internal consistency was α=.83, ω=.86 for LFA, α=.90, ω=.90 for CC, α=.91, ω=.91 for NJAPF, α=.69, ω=.74 for EAC, α=.93, ω=.93 for EAS, α=.91, ω=.91 for ENRP and α=.95, ω=.95 for IMP total.

Parenting Stress

The 18-item Parental Stress Scale (PSS; Berry & Jones, 1995) measures stress associated with the parenting role, for example "I feel overwhelmed by the responsibility of being a parent". The items are rated on a 5-point scale, going from 1 = *Strongly disagree* to 5 = *Strongly agree*. Items 1, 2, 5- 8, 17, and 18 are reverse-scored, with a higher score indicating more parenting-related stress. Berry and Jones (1995) reported good convergent and discriminant validity for the PSS, and high internal consistency. In this study, pre-program α=.74 and ω=.67, and post-program α=.78 and ω=.69.

Cognitive Emotion Regulation

The Cognitive Emotion Regulation Questionnaire – Short Form (CERQ; Garnefski & Kraaij, 2006) contains 18 items measuring the cognitive emotion regulation strategies that an individual tends to use in negative situations. Responses are given on a 5-point scale ranging from 1 = *(Almost) never* to 5 = *(Almost) always*. The CERQ contains five subscales (Acceptance, Positive Refocusing, Refocus on Planning, Putting into Perspective, Positive Reappraisal) that can be combined into an Adaptive scale, measuring generally helpful strategies, for example "I think about how to change the situation". It also contains four subscales (Self-blame, Other-blame, Rumination, Catastrophizing) that can be combined into a Maladaptive scale, measuring generally unhelpful strategies, for example "I think that basically the cause must lie within myself". A higher scale score indicates more frequent use of the strategies in that scale. The short form CERQ has demonstrated acceptable validity and internal consistency (Garnefski & Kraaij, 2006). In this study, however, items 22 and 27 from

the CERQ Adaptive scale had very low item-total correlations (.07 and -.07, respectively), so were excluded from the scale. In this study, for the shortened Adaptive scale, α=.74 and ω=.74 pre-program and α=.85, ω=.78 post-program. For the Maladaptive scale was α=.83, ω=.85 pre-program, and α=.65, ω=.66 post-program.

Parental Experiential Avoidance

The Parental Acceptance and Action Questionnaire (PAAQ; Cheron et al., 2009) measures experiential avoidance in parenting, being a parent's unwillingness to witness their child's negative emotion and their inability to manage their own reactions to those negative feelings, for example "I try hard to avoid having my child feel depressed or anxious". There are 15-items rated on a 7-point scale from 1 = *Never true* to 7 = *Always true.* Items 1, 5-7, 10 and 11 are reverse scored and higher scores indicate more experiential avoidance. The items are summed to create a Total score. Cheron et al. (2009) have reported the PAAQ's concurrent validity and adequate internal consistency. In this study, pre-program α=.80, ω=.79 and post-program α=.85, ω=.84.

Parent Beliefs Regarding Child Anxiety

The Parental Attitudes, Beliefs and Understanding about Anxiety scale (PABUA; Wolk et al., 2016) measures a parent's beliefs and attitudes about their child's anxiety, with three scales: Overprotection, Approach and Distress. Wolk et al. (2016) reported the PABUA to have adequate to good internal consistency and good convergent and divergent validity, but in this study the Approach and Distress scales were excluded from analyses due to poor internal consistency and reliability (Approach: α=.46, ω=.59 pre-program and α=.49, ω=.72 post-program; Distress: α=.54, ω=.54 pre-program and α=.56, ω=.60 post-program). We therefore used only the Overprotection scale, which measures parent beliefs about the need to protect their child from anxiety. Pre-program α=.79, ω=.81 and post-program α=.77, ω=.75. The 11 items in the Overprotection scale, for example "It is important that I protect my child

from feeling anxious", are answered on a 5-point scale, from 1 = *Strongly disagree* to 5 = *Strongly agree*, with higher scores indicating less helpful beliefs about anxiety.

Child Internalizing Symptoms

We used the parent report versions of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000, 2001) for preschool-aged children (3-5 years) and school-aged children (6-18 years), to assess child internalizing, with the broadband Internalizing Problems scale (33 items, for example "Unhappy, sad or depressed" and "Too fearful or anxious"). The items have a 3-point response scale, where 0 = *Not true (as far as you know)*, 1 = *Somewhat or sometimes true* and 2 = *Very true or often true*. A higher score indicates more problems. The CBCL has strong convergent and discriminant validity and internal consistency (Achenbach & Rescorla, 2000, 2001). In this sample, the Internalizing scale had pre-program Cronbach's alphas of .83 (school-age) and .84 (preschool-age) and post-program alphas of .85 (school-age) and .63 (preschool-age). Reliability could not be calculated using McDonald's omega due to some items having zero variance. This is likely to be due to the restricted range of symptom severity amongst children of community-recruited families.

Weekly Coping with Parenting Stress

To investigate whether the intervention group parents were benefitting from the program at specific moments of parenting stress, not just at a general trait level, we assessed the intensity of parenting stress, and various aspects of parents' mindfulness, weekly throughout the program in relation to specific, stressful parenting situations. At the beginning of each of the eight sessions, intervention group parents were guided to visualise a stressful or difficult situation that they had experienced in the past week with or relating to their child. They were encouraged to imagine themselves back in that situation, and to recall as vividly as possible what they were thinking and feeling at the time. In-session, immediately following that guided visualisation, we assessed intensity of parenting stress ("During this difficult

situation regarding your child, how intensely did you feel stressed (or overwhelmed or unable to cope)?" on a scale of 1 = *Not at all* to 7 = *Extremely intensely*). In relation to parents' experiences during that difficult situation, we assessed (1) the ability to decenter from thoughts and emotions ("I experienced my thoughts and/or feelings as events in my mind, rather than as reflections of reality"), (2) experiential avoidance ("I wished I did not have to deal with what was happening" and "It was unpleasant or uncomfortable to experience my own emotions, and/or watch my child's emotions"), and (3) self-regulation ("I paused to notice how I was feeling about the situation, before I did anything else"). These statements were rated on a scale of 1 = *Not at all true* to 7 = *Extremely true*. For the 5 face-to-face sessions, these assessments were completed on paper by parents individually, without discussion, with a facilitator collecting the questionnaires prior to the rest of the session proceeding. For the 3 Zoom sessions, parents received a personal link to the questionnaire on Zoom and submitted their answers online prior to the rest of the session proceeding.

Qualitative Assessment of Pathways from Mindful Parenting to Child Internalizing

After program completion, the parents were asked the following questions online, through Qualtrics, about whether and how they believed the program had helped them as parents, including in relation to any perceived child anxiety: (1) Has your relationship with your emotions changed? If yes, how? (2) Did the program change the way you experience your child? If yes, how has this changed? (3) Do you think mindfulness can help you cope with your child's anxiety? If yes, how do you think it will help? (4) Did the mindful parenting program change the way you view your child's anxiety? If yes, how did this change? The initial questions were kept short and closed (*yes/no*), and were then immediately followed by a broad, open question (*If yes, how…?*). This technique is recommended for the online collection of qualitative data, in order to sufficiently direct participants' attention to the issues the researcher wishes them to consider, whilst providing participants the freedom

to explain what their own thoughts or experiences were regarding those issues (Braun et al., 2020). The questions directed parents' attention to whether they changed their relationship with their own and their child's emotions, and whether they believed an aspect of mindfulness was behind this change, because we were interested to know whether the beliefs that parents expressed about these issues converged with any changes under the self-report measures, in particular the IMP.

Data Analyses

To examine within- and between-group differences between pre-program scores, and mid-program, post-program, and 2-month follow-up scores, we used Microsoft Excel (2003) to calculate Cohen's *d* standardised mean difference effect sizes. For within-group analyses, we used the difference between time 1 and 2 means divided by the standard deviation within group and assumed a correlation of $r = 0.7$ to calculate the standard deviation within group (for details, see Borenstein et al., 2009). For the between-group analyses, although there were no significant differences between groups on pre-program outcome scores, this may have been partly due to the low numbers in each group. In order to account for any pre-program differences between groups, we therefore used the difference between the treatment and control group change scores, divided by the pooled pre-program standard deviations (for details, see Morris, 2008). An effect size of 0.2 represents a small effect, 0.5 a moderate effect and 0.8 a large effect (Cohen, 1988). In line with CONSORT guidelines for reporting results of pilot trials that are not powered to test effectiveness, we did not test for statistical significance of these within- or between-group changes (Eldridge et al., 2016).

For the intervention group's weekly coping data, we conducted repeated-measures ANOVAs using IBM SPSS Statistics for Windows (Version 26), to examine the pattern of change in that data across the 8-week program. As there were numerous trends in the data that could have been reported, we have reported only the largest of the trends that reached

statistical significance. We also conducted reliable change analyses of self-report outcomes for intervention group parents, using Microsoft Excel (2003). These analyses are suitable for small samples (Zahra & Hedge, 2010) and indicate whether an individual participant's change is clinically significant, or greater than could occur due to measurement error. Reliable change occurs when the difference between a participant's pre- and post-program scores, divided by the standard error of the difference, is greater than 1.96 (Jacobson & Truax, 1991). The standard error of the difference has been calculated using the pre-program Cronbach's alpha, and the standard deviation of the intervention group for each measure (for details, see Busch et al., 2011).

For the qualitative investigation of possible pathways between mindful parenting and child internalizing, we used thematic analysis (Braun & Clarke, 2006) to examine parent feedback regarding changes in parenting. Following the process set out by Braun and Clarke (2006), one author (VB) and a doctoral level clinical psychology post-graduate student read the parent responses to familiarize themselves with the data, then independently coded the data by hand, based on its surface or apparent meaning (Braun & Clarke, 2006), and identified potential themes amongst the coded data. Next, these two researchers refined the list of themes by reviewing the potential themes together, checking that the individual pieces of coded data fit with the proposed themes and agreeing a final list of themes. The themes were then defined by VB and are reported in this paper.

Results

Demand

Figure 1 shows the flow of participants through the study, including registrations of interest, enrolment, allocation to groups and measurement points. Table 2 shows participant recruitment rates by initial contact and number of registrations. Of the individuals initially contacted via Facebook, and who went on to register their interest in participating in the

study, 22.0% were enrolled in the study. Overall, 2.1% of individuals contacted via Facebook enrolled in the study. For those individuals contacted by email who subsequently registered their interest in participating, 22.2% enrolled. Overall, we enrolled 3.4% of the individuals contacted by email.

Figure 1

Flow of participants from registration of interest to follow-up assessment

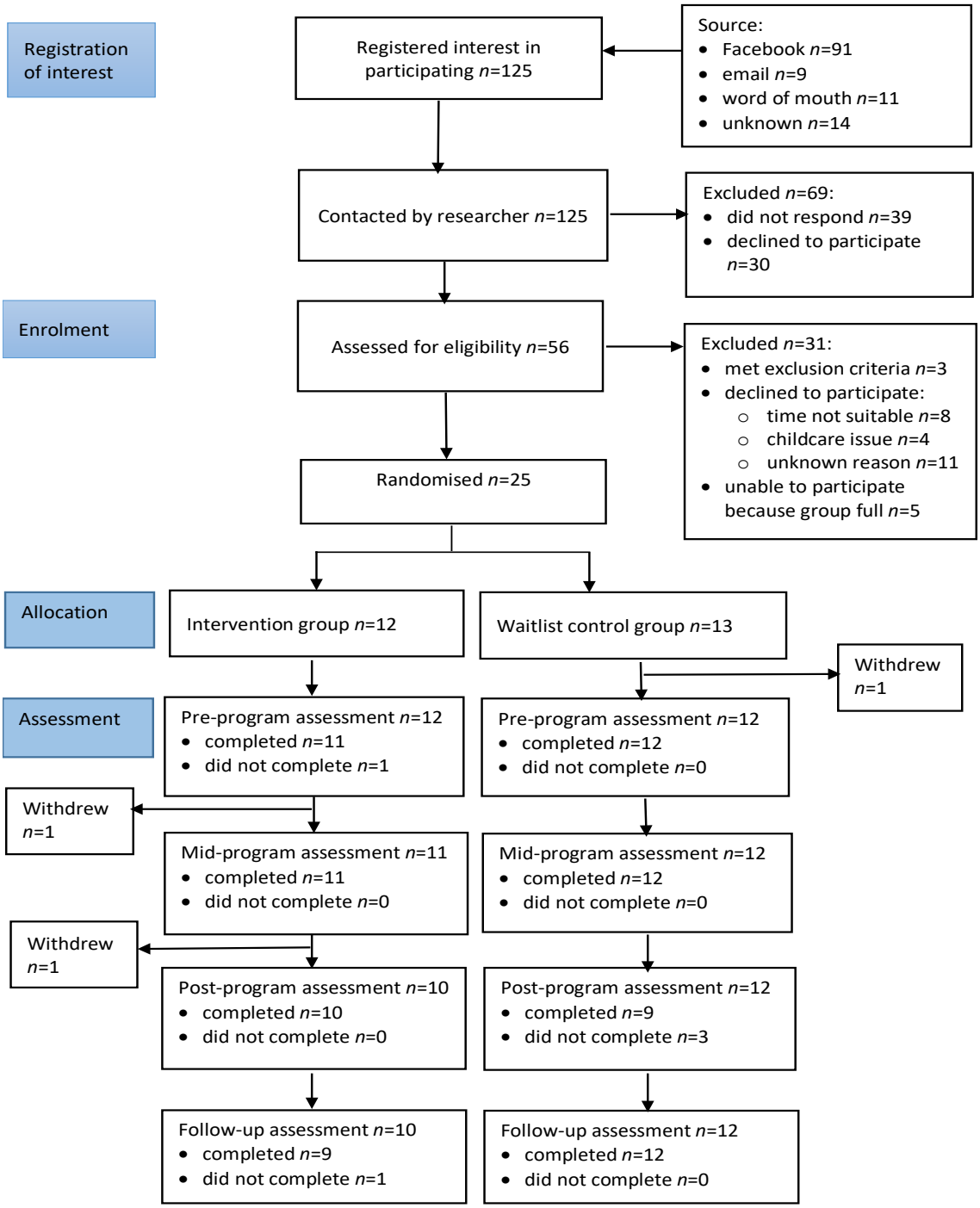


Table 2

Participant recruitment rates

Location of study advertisement	Initial contacts made[a] (*n*)	Registrations of interest (*n*)	Study enrolments (*n*)	Recruitment rate by contact[b]	Recruitment rate by registration[c]
Facebook	965	91	20	2.1%	22.0%
Email	58	9	2	3.4%	22.2%
Other[d]	-	25	3	-	12.0%
Total	1023	125	25	2.4%	20.0%

Note. [a]For email = number of study advertisement emails sent; for Facebook = number of engagements by Facebook users with the post advertising the study; [b]Enrolments as a percentage of initial contacts; [c]Enrolments as a percentage of registrations of interest; [d]Parents who heard about the study through word-of-mouth and independently approached the researchers; as the researchers did not initiate contact with these parents, no recruitment rate by contact is available for this category.

The average attendance rate of intervention group parents (*n* = 12) was six out of eight sessions (75%). Two parents were unable to continue their attendance after the fourth session for reasons related to the COVID-19 pandemic. Nine of the 12 parents attended at least six sessions, giving a completion rate of 75%. One parent from each of the intervention and waitlist (*n* = 13) groups withdrew from the study after randomization but before the intervention began, giving a withdrawal rate of 8%. Two of the 12 intervention group parents completed less than four sessions, giving an attrition rate of 16.7%.

Acceptability

In relation to perceived usefulness of the program and the impact of COVID-19, 100% of parents reported that they preferred face-to-face over online groups. Twenty percent of parents reported that the pandemic had a very positive impact on their ability to benefit from the program, while 60% said it had a minor negative impact and 20% said it had a moderate negative impact. Despite the majority of parents reporting that the pandemic negatively affected their ability to benefit from the program, parents reported that the program had been important for them, with 20% rating the program an 8, 40% rating it a 9

and 40% rating it a 10, on a scale of *1 = Not useful at all, 10 = Extremely useful*. In addition, 100% of parents reported that they believed they had got something of lasting value or importance as a result of doing the program, and 100% of parents reported that they would recommend the program to family or friends.

Limited-efficacy Testing

The means and standard deviations for each outcome at each measurement point are shown in Table 3, for both intervention and waitlist groups. Table 4 shows the within- and between-group Cohen's *d* effect sizes for the changes in those outcomes. Between-group differences all favored the intervention group. At program completion (T3), differences between the intervention and waitlist control groups were moderate to large, except for CERQ Adaptive, where the difference was small, and CBCL Pre-school Internalizing, which was negligible. At follow-up (T4), the differences remained moderate to large, except for CBCL Pre-school Internalizing and IMP Compassion for the Child, where the differences were negligible, and CERQ Adaptive, where the differences were small.

In relation to within-group changes, the intervention group outcomes generally improved from pre- to mid-program (T1-T2) and from mid- to post-program (T2-T3). At program completion (T1-T3), the intervention group showed moderate to large improvements from pre-program on all outcomes except CBCL Pre-school Internalizing, which showed negligible change, and CBCL School Internalizing and CERQ Adaptive, which both showed small improvements. Small to moderate improvements then continued to be made on most outcomes between program completion and 2-month follow-up (T3-T4), such that at follow up (T1-T4), the improvements from pre-program remained moderate to large, except for CBCL Pre-school Internalizing and CERQ Adaptive, which were small.

Table 3

Means and standard deviations for child and parent outcomes, for intervention and waitlist control groups

	Pre-program (T1)			Mid- program (T2)			Post-program (T3)			Follow-up (T4)		
Outcomes	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*
IMP Total												
Intervention	93.91	12.28	11	101.45	10.70	11	106.40	11.23	10	108.78	13.99	9
Waitlist	93.83	15.04	12	96.92	17.98	12	91.67	16.82	9	96.83	15.01	12
IMP LFA												
Intervention	15.55	2.25	11	16.82	1.72	11	17.50	2.01	10	18.33	2.24	9
Waitlist	15.08	2.11	12	16.00	3.10	12	14.67	2.12	9	15.33	2.84	12
IMP CC												
Intervention	23.91	4.28	11	24.82	3.06	11	25.40	3.92	10	25.44	4.59	9
Waitlist	23.58	3.55	12	23.58	3.45	12	22.78	2.91	9	24.92	2.87	12
IMP NJAPF												
Intervention	17.18	4.75	11	18.55	4.39	11	20.50	3.24	10	21.56	4.10	9
Waitlist	17.33	4.19	12	17.33	5.05	12	15.78	5.74	9	17.17	4.22	12
IMP EAC												
Intervention	10.45	1.29	11	10.91	1.22	11	11.70	1.06	10	11.78	1.86	9
Waitlist	11.50	2.07	12	11.58	2.35	12	12.00	1.41	9	11.50	1.93	12
IMP EAS												
Intervention	11.45	1.69	11	13.73	2.00	11	14.10	1.79	10	13.78	2.44	9
Waitlist	11.58	3.06	12	12.83	3.07	12	11.89	4.88	9	12.58	3.80	12
IMP ENRP												
Intervention	15.36	2.66	11	16.64	3.11	11	17.20	2.62	10	17.89	3.14	9
Waitlist	14.75	3.96	12	15.58	4.78	12	14.56	4.59	9	15.33	4.05	12
PSS												
Intervention	44.45	5.05	11	41.18	5.49	11	37.30	6.58	10	34.00	4.97	9
Waitlist	44.25	7.81	12	44.25	8.78	12	44.67	3.97	9	43.17	9.08	12
CERQ Adaptive												
Intervention	22.45	5.32	11	22.09	4.66	11	23.30	7.38	10	25.00	6.25	9
Waitlist	21.75	4.35	12	22.17	3.21	12	22.00	2.12	9	23.58	4.58	12
CERQ Maladaptive												
Intervention	20.45	6.62	11	17.45	3.75	11	17.10	3.07	10	16.44	1.94	9
Waitlist	18.58	2.87	12	19.33	3.39	12	18.33	4.50	9	18.08	3.29	12
PAAQ Total												
Intervention	57.18	10.00	11	48.45	9.84	11	45.80	11.15	10	45.22	8.38	9
Waitlist	54.42	12.44	12	54.42	12.77	12	57.44	9.19	9	52.42	11.93	12

Table 3 continued

Outcomes	Pre-program (T1)			Mid- program (T2)			Post-program (T3)			Follow-up (T4)		
	M	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*
PABUA Overprotection												
Intervention	29.18	7.80	11	24.64	6.92	11	25.70	6.18	10	25.44	9.49	9
Waitlist	27.17	5.22	12	26.50	5.92	12	26.44	5.90	9	27.33	4.79	12
CBCL School Internalizing												
Intervention	14.63	7.73	8	10.63	4.57	8	11.86	3.89	7	9.50	4.18	6
Waitlist	11.17	5.08	6	10.60	7.23	5	15.50	10.75	4	15.20	13.55	5
CBCL Preschool Internalizing												
Intervention	15.67	6.66	3	17.33	6.66	3	15.33	8.34	3	15.00	4.58	3
Waitlist	16.33	8.59	6	14.29	8.50	7	15.60	2.70	5	16.00	9.61	7

Note. IMP Total is Interpersonal Mindfulness in Parenting (IMP) Total scale; IMP LFA is IMP Listening with Full Attention scale; IMP CC is IMP Compassion for the Child scale; IMP NJAPF is IMP Non-judgmental Acceptance of Parental Functioning scale; IMP EAC is IMP Emotional Awareness of the Child scale; IMP EAS is IMP Emotional Awareness of the Self scale; IMP ENRP is IMP Emotional Non-reactivity in Parenting scale; PSS is Parental Stress Scale; CERQ Adaptive is Adaptive scale, Cognitive Emotion Regulation Questionnaire – Short Form (CERQ); CERQ Maladaptive is Maladaptive scale, CERQ; PAAQ Total is Total scale, Parental Acceptance and Action Questionnaire; PABUA Overprotection is Overprotection scale, Parental Attitudes, Beliefs and Understanding about Anxiety scale; CBCL School Internalizing is Internalizing scale, Child Behavior Checklist (CBCL) 6-18 years; CBCL Preschool Internalizing is Internalizing scale, CBCL 3-5 years.

Table 4

Cohen's d within- and between-group effect sizes for child and parent outcomes

	Within-group effects[a]					Between-group effects[b]		
Outcomes	T1-T2	T2-T3	T3-T4	T1-T3	T1-T4	T1	T3	T4
IMP Total	0.84	0.48	0.35	0.96	1.15	0.01	1.02	0.83
IMP LFA	0.64	0.26	0.54	0.67	0.82	0.22	1.04	1.12
IMP CC	0.28	0.25	0.01	0.48	0.48	0.08	0.56	0.05
IMP NJAPF	0.39	0.41	0.28	0.65	0.98	-0.03	1.05	0.98
IMP EAC	0.31	0.50	0.05	0.77	0.78	-0.60	0.42	0.74
IMP EAS	0.86	0.15	-0.15	0.94	0.90	-0.05	0.90	0.51
IMP ENRP	0.60	0.89	0.28	0.67	0.93	0.18	0.58	0.52
PSS	0.57	0.56	0.43	0.89	1.18	0.03	1.10	1.36
CERQ Adaptive	-0.07	0.19	0.21	0.16	0.31	0.19	0.12	0.14
CERQ Maladaptive	0.47	0.09	0.20	0.47	0.55	-0.37	0.60	0.67
PAAQ Total	0.76	0.31	0.07	0.77	0.86	-0.24	1.22	0.85
PABUA Overprotection	0.83	-0.18	0.04	0.43	0.42	-0.31	0.40	0.57
CBCL School Internalizing	0.55	-0.29	0.39	0.26	0.40	-0.51	0.98	1.27
CBCL Preschool Internalizing	-0.27	0.25	0.03	0.03	0.19	0.08	0.04	0.04

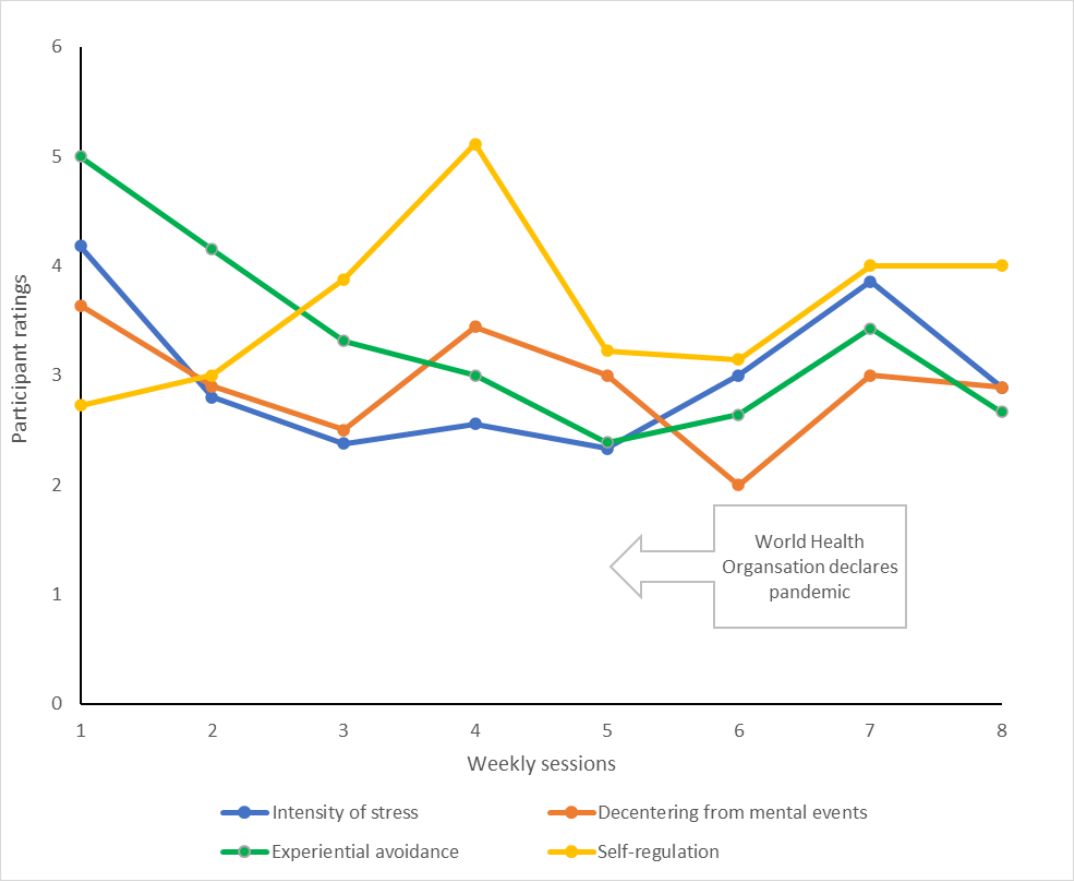
Note. [a]Within-group, a negative effect size indicates a deterioration in the outcome; [b]Between-group, a negative effect size indicates that the effect favours the waitlist control group; T1 = pre-program; T2 = mid-program; T3 = post-program; T4 = 2-month follow-up; IMP Total is Interpersonal Mindfulness in Parenting (IMP) Total scale; IMP LFA is IMP Listening with Full Attention scale; IMP CC is IMP Compassion for the Child scale; IMP NJAPF is IMP Non-judgmental Acceptance of Parental Functioning scale; IMP EAC is IMP Emotional Awareness of the Child scale; IMP EAS is IMP Emotional Awareness of the Self scale; IMP ENRP is IMP Emotional Non-reactivity in Parenting scale; PSS is Parental Stress Scale; CERQ Adaptive is Adaptive scale, Cognitive Emotion Regulation Questionnaire – Short Form (CERQ); CERQ Maladaptive is Maladaptive scale, CERQ; PAAQ Total is Total scale, Parental Acceptance and Action Questionnaire; PABUA Overprotection is Overprotection scale, Parental Attitudes, Beliefs and Understanding about Anxiety scale; CBCL School Internalizing is Internalizing scale, Child Behavior Checklist (CBCL) 6-18 years; CBCL Preschool Internalizing is Internalizing scale, CBCL 3-5 years.

Figure 2 shows the pattern of weekly change in intensity of stress, experiential avoidance, self-regulation and decentering from mental events, for specific moments of parenting stress experienced by parents. Intensity of stress fell from weeks 1 ($M = 4.18$, $SD = 1.40$) to 8 ($M = 2.89$, $SD = 1.22$) in a strong cubic pattern ($p < .001$, $\eta_p^2 = .80$). In those

stressful situations, experiential avoidance also fell (week 1 $M = 5.00$, $SD = 1.10$; week 8 $M = 2.67$, $SD = 1.02$) in a strong quadratic ($p < .001$, $\eta_p^2 = .78$) manner, while self-regulation increased (week 1 $M = 2.73$, $SD = 1.62$; week 8 $M = 4.00$, $SD = 1.34$) in a strong cubic ($p = .02$, $\eta_p^2 = .41$) manner. However, parents' ability to decenter from mental events deteriorated from week 1 ($M = 3.64$, $SD = 1.36$) to week 8 ($M = 2.89$, $SD = 1.30$), with no particular pattern evident in this deterioration (all $ps > .05$). The patterns indicate that over the course of the program, parents experienced improvements in intensity of stress, experiential avoidance and self-regulation, albeit with some deterioration in the week leading up to and immediately after the declaration of the COVID-19 pandemic.

Figure 2

Participant change in intensity of stress and mindfulness, in stressful parenting situations



Note. Lower scores represent less intense stress and experiential avoidance, but poorer self-regulation and decentering.

Based on the reliable change analyses, Table 5 shows the proportions of intervention group participants who reliably improved, improved, did not change, deteriorated and reliably deteriorated, on each outcome. Post-program, reliable improvements were seen in 20% of participants on the Parenting Stress Scale, 50% or more of participants on the IMP Total and Emotional Awareness of Self, and PAAQ Total scales, and in 10-40% of participants on the remaining seven parent outcomes listed in Table 5. At follow-up, the proportions were similar, with reliable improvements in 55% or more of participants on the Parenting Stress Scale, IMP Total and Emotional Non-reactivity in Parenting, and PAAQ Total, and in 11-33% of participants on the remaining eight outcomes. Reliable deterioration was seen in one participant at post-program, for PAAQ Total, and by that same participant and one other at follow-up, for PAAQ Total and CERQ Adaptive. For child outcomes post-program, one of seven school-aged children (14%) and one of three preschool-aged children (33%) showed reliable improvement in internalizing symptoms. At follow-up, two of six school-age children (33%) and none of three preschool-aged children showed reliable improvements.

Table 5

Reliability of change on each outcome in intervention group participants, from pre- to post-program, and pre-program to follow-up

	Reliable improvement[a]				Improvement[b]				No change[c]				Deterioration[d]				Reliable deterioration[e]			
	T1-T3		T1-T4		T1-T3		T1-T4		T1-T3		T1-T4		T1-T3		T1-T4		T1-T3		T1-T4	
Outcomes	n/n[f]	%	n/n	%	n/n	%	n/n	%	n/n	%	n/n	%	n/n	%	n/n	%	n/n	%	n/n	%
IMP Total	7/10	70	6/9	67	3/10	30	3/9	33	0/10	0	0/9	0	0/10	0	0/9	0	0/10	0	0/9	0
IMP LFA	4/10	40	3/9	33	3/10	30	6/9	67	2/10	20	0/9	0	1/10	10	0/9	0	0/10	0	0/9	0
IMP CC	2/10	20	2/9	22	3/10	30	4/9	44	3/10	30	1/9	11	2/10	20	2/9	22	0/10	0	0/9	0
IMP NJAPF	3/10	30	2/9	22	5/10	50	6/9	67	1/10	10	1/9	11	1/10	10	0/9	0	0/10	0	0/9	0
IMP EAC	4/10	40	1/9	11	3/10	30	4/9	44	2/10	20	4/9	44	1/10	10	0/9	0	0/10	0	0/9	0
IMP EAS	5/10	50	2/9	22	4/10	40	5/9	56	1/10	10	2/9	22	0/10	0	0/9	0	0/10	0	0/9	0
IMP ENRP	4/10	40	5/9	56	4/10	40	1/9	11	1/10	10	3/9	33	1/10	10	0/9	0	0/10	0	0/9	0
PSS	2/10	20	5/9	56	7/10	70	4/9	44	0/10	0	0/9	0	1/10	10	0/9	0	0/10	0	0/9	0
CERQ Adaptive	1/10	10	3/9	33	4/10	40	2/9	22	1/10	10	2/9	22	4/10	40	1/9	11	0/10	0	1/9	11
CERQ Maladaptive	2/10	20	2/9	22	4/10	40	3/9	33	1/10	10	2/9	22	3/10	30	2/9	22	0/10	0	0/9	0
PAAQ Total	8/10	80	7/9	78	1/10	10	1/9	11	0/10	0	0/9	0	0/10	0	0/9	0	1/10	10	1/9	0
PABUA Overprotection	2/10	20	1/9	11	4/10	40	5/9	56	0/10	0	1/9	11	4/10	40	2/9	22	0/10	0	0/9	0
CBCL School Internalizing	1/7	14	2/6	33	4/7	57	1/6	17	1/7	14	2/6	33	1/7	14	1/6	17	0/7	0	0/6	0
CBCL Preschool Internalizing	1/3	33	0/3	0	0/3	0	1/3	33	0/3	0	1/3	33	2/3	67	1/3	33	0/3	0	0/3	0

Note. [a]Standardised difference score (Δ) shows improvement ≥1.96; [b]Δ shows improvement >0 but <1.96; [c]Δ = 0; [d]Δ shows deterioration >0 but <1.96; [e]Δ shows deterioration ≥1.96; [f]n/n is the number of participants with change at each level, out of the number of participants for whom data was available; IMP Total is Interpersonal Mindfulness in Parenting (IMP) Total scale; IMP LFA is IMP Listening with Full Attention scale; IMP CC is IMP Compassion for the Child scale; IMP NJAPF is IMP Non-judgmental Acceptance of Parental Functioning scale; IMP EAC is IMP Emotional Awareness of the Child scale; IMP EAS is IMP Emotional Awareness of the Self scale; IMP ENRP is IMP Emotional Non-reactivity in Parenting scale; PSS is Parental Stress Scale; CERQ Adaptive is Adaptive scale, Cognitive Emotion Regulation Questionnaire – Short Form (CERQ); CERQ Maladaptive is Maladaptive scale, CERQ; PAAQ Total is Total scale, Parental Acceptance and Action Questionnaire; PABUA Overprotection is Overprotection scale, Parental Attitudes, Beliefs and Understanding about Anxiety scale; CBCL School Internalizing is Internalizing scale, Child Behavior Checklist (CBCL) 6-18 years; CBCL Preschool Internalizing is Internalizing scale, CBCL 3-5 years.

Expansion

Ten of the 11 intervention group parents provided post-program feedback regarding whether and how their parenting changed after the program, including in relation to perceived child anxiety. Six themes were identified in this feedback: present-moment awareness, intensity of emotional experience, acceptance, self-regulation, empathy, and self-compassion. Table 6 describes these themes and gives examples illustrating each one.

Table 6

Themes identified in parent feedback regarding the impact of the mindful parenting program (N = 10)

Theme (*n*)[a]	Description of theme	Excerpt of parent feedback
Present-moment awareness (5)	Describes parents' increased awareness and understanding of their current experience and how this impacts their parenting	*P2: It has given me a chance to assess how I am feeling which [drives] my decisions* *P6: Allows me to understand my reaction to it [my child's anxiety]*
Intensity of emotional experience (5)	Captures parents' reports of less intense emotional experiences in parenting, and their increased understanding of these experiences	*P1: Less angry* *P7: You react with much less anxiety yourself* *P11: I see his anxiety as a normal but not a stressful issue*
Acceptance (7)	Parents reported becoming more tolerant and accepting of difficult emotions and situations	*P8: They're the same emotions, but I'm trying to sit with them before reacting now* *P10: Felt not so overwhelmed about having to problem solve it [my child's anxiety]/her*
Self-regulation (6)	Describes parents' enhanced ability to consciously respond, rather than automatically react, to their child	*P3: Being able to take time and think before I respond to her reactions* *P9: More patience to help her work through anxiety, opens up new options*
Empathy (8)	Parents described having a broader perspective of their child, being more understanding of them and more able to empathise with them	*P6: Allowed me to reconnect with the bigger picture of my child's life, beyond the one issue* *P8: I've taken more time to really appreciate her* *P10: To become more empathetic about my child's feelings and understanding … while at times hard to understand, give her the space and time to explain them*
Self-compassion (2)	Parents reported feeling less isolated in dealing with their child's difficulties	*P7: I found that … we are not alone in the anxiety struggle* *P11: I'm less hard on myself when things don't go right*

Note. [a]number of parents whose comments identified the theme

Discussion

This study investigated the feasibility of a mindful parenting program for parents concerned about their child's internalizing problems. We explored demand for the program success by measuring recruitment, attendance, completion and attrition rates, and acceptability of the program by obtaining feedback on usefulness. To explore ways that mindful parenting might reduce child internalizing, we sought estimates of likely effect sizes in a future definitive trial of the program, for changes in child internalizing problems, mindful parenting, parenting stress, parental experiential avoidance, cognitive emotion regulation and beliefs about child anxiety. We also used qualitative feedback from parents to explore whether and how mindful parenting might help them cope with child internalizing problems, particularly anxiety.

As hypothesized, there is demand for the program from parents concerned about their child's internalizing symptoms. The recruitment rates were 2.1% (by Facebook advertisement) and 3.4% (by email). While low, these rates compare favourably to the mean rate of 7% reported in a review of studies using Facebook to recruit for health research (Whitaker et al., 2017). The great majority of the reviewed studies involved only online surveys, whereas this study involved attending a 16-hour program in addition to the collection of data at four points over a four-month period. The attendance and completion rates in this study were both 75%. This rate is acceptable compared to rates reported by other mindful parenting intervention studies, for example, 50% attended at least 4 of 8 sessions in Bögels et al. (2008), 74% attended at least 4 of 8 sessions in Mann et al. (2016), and 84% completed at least 6 of 8 sessions in Racey et al. (2017). While the completion rate was lower than in Racey et al., this was at least partly attributable to the declaration of the COVID-19 pandemic, which prevented two parents (16.7% of the group) from attending after the fifth session. Acceptability is indicated by parent-reported usefulness of the program. Despite

most parents believing the pandemic negatively impacted their ability to benefit from the program, all still found the program to be of lasting value and would recommend it to others, suggesting that a mindful parenting program can be helpful even at times of heightened general stress.

Concerning preliminary effects, compared to waitlist, the intervention group reported large reductions in internalizing problems for their school-aged children (6-18 years). Existing studies have shown reduced internalizing problems in groups of children with externalizing problems or mixed diagnoses (Haydicky et al., 2015), so the present results suggest these reductions also occur for children with primary internalizing concerns. However, despite the preliminary evidence of treatment success at the group level, the low rates of reliable improvement at the individual level indicate that a substantial proportion of children did not benefit from their parents doing the program. This is consistent with findings from other studies, which typically show quite low rates of improvement with reliable change analyses, even for evidence-based child treatments (Smith & Jensen-Doss, 2017). For preschool-aged (3-5 years) children, the symptom reductions were negligible. Due to the dearth of research on the differential impacts of mindful parenting for children of particular developmental stages, it is unclear why the program appeared to benefit only the older group. One study of developmentally delayed preschool children found less internalizing problems after their parents attended a MBSR program (McGregor et al., 2020). The discrepancy between that study and the present one could be due to low baseline levels of internalizing problems in the present sample of preschool children, particularly compared to the higher rates for developmentally delayed children (Van Steensel et al., 2011), such that there was limited scope for improvement in the present sample. Alternatively, since none of the preschool children had reliably reduced internalizing symptoms at follow-up, it is possible that the program did not meet the needs of parents with younger children. Older children are

generally more likely to be classified as improved under reliable change analyses, so more targeted programs may be needed for younger children (Smith & Jensen-Doss, 2017), including in mindful parenting programs.

There were moderate to large improvements in all facets of mindful parenting, and overall mindful parenting reliably improved in 70% of parents. This suggests the program was successful in its aim to develop parents' ability to broaden their attentional focus and acceptance regarding their child. There were also moderate to large reductions in parenting stress, parental experiential avoidance, maladaptive cognitive emotion regulation and unhelpful beliefs regarding child anxiety, and a small increase in adaptive cognitive emotion regulation. These results provide tentative evidence that mindful parenting is at least as useful for parents concerned about child internalizing, as for those managing child externalizing, since the latter group of parents have typically reported only small to moderate reductions in parenting stress, psychopathology and negative parenting style (Bögels et al., 2014). The results also suggest that improved parental emotion regulation may be one way in which mindful parenting can reduce child internalizing symptoms. By building parents' ability to tolerate difficult emotions, the program may help parents to model more helpful, active coping strategies for their child, instead of the avoidant coping behaviors that tend to maintain internalizing symptoms (Tiwari et al., 2008). Parental modelling of strategies predicts the child's use of strategies and the child's internalizing symptoms (Gunzenhauser et al., 2014; Wald et al., 2018).

This study went beyond showing general trait improvements. The weekly coping data showed that, even with pandemic-related uncertainty occurring throughout the program, parents felt less intensely stressed and were less experientially avoidant and more self-regulated, in specific, difficult parenting moments. The program therefore appears to help parents respond to their children in a more helpful manner, even at times of heightened stress

when this might otherwise have been too difficult. This is particularly important in relation to parents of children with internalizing problems, since they are more likely to interpret situations in a threatening manner (Creswell et al., 2005) and to intervene in difficult situations, for example by physically or emotionally removing themselves or their child from the situation, which can contribute to or maintain child internalizing problems (McLeod et al., 2007; Tiwari et al., 2008). This could be explained by the program successfully broadening parents' attentional focus and acceptance regarding their child, so they become more receptive to experience (Bishop et al., 2004). This would allow for less threatening evaluations of particular situations, and therefore lowered stress appraisals (Weinstein et al., 2009) and less need for avoidant, overprotective or other unhelpful parenting behavior (Tiwari et al., 2008).

Finally, based on the qualitative feedback, it appears likely that a mindful parenting program would be successful with parents of children with primary internalizing concerns. Parent feedback regarding how the program helped them to cope with their child's internalizing symptoms raised six themes that overlapped somewhat with the six facets of the IMP (de Bruin et al., 2014). The two most commonly identified themes were *acceptance* and *empathy*, which was similar to the acceptance and emotional awareness that we expected. Acceptance, and the theme *self-compassion*, together reflect the IMP facet Non-judgmental Acceptance of Parental Functioning (NJAPF), which captures a parent's ability to be accepting and compassionate regarding themself as a parent. The identification of the themes acceptance and self-compassion is consistent with evidence from earlier studies, which have found NJAPF to be the aspect of mindful parenting most predictive of child internalizing problems (Burgdorf & Szabó, 2021). The theme *empathy* encompasses the Emotional Awareness of the Child (EAC) and Compassion for the Child facets of the IMP. After NJAPF, EAC is the only other facet of mindful parenting that has been found to predict child

internalizing problems (Burgdorf & Szabó, 2021). Lack of awareness regarding a child's anxiety could result in a parent failing to help the child manage that anxiety or managing it unhelpfully (Hurrell et al., 2017). Conversely, more aware or empathic parents can help reduce child anxiety, for example by providing an appropriate level of encouragement for their child to approach anxiety-inducing situations, allowing gradual exposures to such situations (Settipani & Kendall, 2017). Greater empathy may also reduce child internalizing by increasing the child's perception of parental warmth or support (Flory, 2004; Stern et al., 2015), which is longitudinally associated with reductions in child internalizing problems (Pinquart, 2017).

Parent feedback also raised themes of *present-moment awareness*, *intensity of emotional experience* (including less intense stress), and *self-regulation*. The intensity of emotional experience and self-regulation themes were similar to the Emotional Awareness of Self and Emotional Non-reactivity in Parenting IMP facets. Although some studies have found that parenting stress does not predict child internalizing (Burgdorf et al., 2019; Emerson et al., 2019a), there may be an indirect link, through self-regulation. Stress makes it more difficult for parents to use appropriate strategies to regulate their own emotional state and behaviors (Crandall et al., 2015; Raio et al., 2013). As self-regulation influences how parents respond to a child's negative emotions, and the development of a child's own regulatory skills (Morris et al., 2017), it plays a crucial role in the child's well-being, including their level of anxiety (Morris et al., 2017; Wald et al., 2018). Accordingly, less stressed parents can better self-regulate, thus lowering their child's risk of anxiety. *Present-moment awareness* was similar to the IMP Listening with Full Attention facet (LFA), although unlike LFA, it related to the parents' attention for their own, rather than their child's, present experiences. A heightened awareness of their own experience and how it affects their parenting may also improve parental self-regulation, by allowing more conscious

responding to the child, for example with more positive and less negative behaviors, which both predict lower child internalizing problems over time (Pinquart, 2017). Overall, the qualitatively-identified themes support the quantitative data in suggesting that mindful parenting may help reduce child internalizing symptoms by improving parents' ability to regulate themselves and by improving their emotional connection with their child.

Limitations and Future Research

There were several limitations related to assessment, in this study. The post-program internal consistencies and reliabilities for the CERQ Maladaptive and CBCL Internalizing (preschool) scales were relatively low. This could have impacted the accuracy of the effects found for these two outcomes. Common method bias is also likely to have affected the effect estimates. For example, using parents as the sole respondents may have inflated effects due to the tendency to respond in a positive way or social desirability (Podsakoff et al., 2012). Parents invested significant time in the 8-week program, which may have led them to report greater improvements in the measured outcomes than actually occurred. Future studies could reduce the impact of this bias by including different respondents (Podsakoff et al., 2012), such as partners or children of participating parents, for example regarding the child's internalizing symptoms and their perceptions of any change in the participating parent. The qualitative data was collected from parents online, using a small number of open-ended questions. Whilst the use of online questionnaires for collecting qualitative data is convenient for parents and can provide rich data (Braun et al., 2020), it is also possible that parents may have given less thought to their answers or provided less detail in this online format, than if they were interviewed by a researcher.

There were also limitations related to the sample. As we used a community-recruited sample, it is suggested that the study be replicated in a clinical sample, for example with parents of children with a diagnosed internalizing disorder. It is also important to note that the

proportion of fathers participating in this study was very low (8%), with only 1 father participating in each group. Mothers report higher levels of mindful parenting than fathers (Moreira & Canavarro, 2015), and there is no evidence as to the structure of mindful parenting in fathers (Burgdorf & Szabó, 2021). The present results may therefore not be indicative of the outcomes for fathers, either due to differences between mothers and fathers in baseline levels, or in the structure, of mindful parenting. Similarly, the sample was homogenous in that it consisted largely of parents with a tertiary education, who identified culturally as "Australian". Replication of the study in different population groups is necessary, as parental engagement with parenting programs can be affected by factors including education, socio-economic status and cultural values (Axford et al., 2012). Accordingly, although promising, the improvements in parent and child outcomes in this small feasibility sample must be regarded as preliminary, until replicated in a definitive trial of the program for this population of parents.

CHAPTER SIX. General Discussion

This Chapter summarizes the findings of the research conducted for this thesis and discusses their theoretical and clinical implications. Strengths and limitations of the thesis are noted and avenues for further research suggested.

Abstract

This thesis sought to contribute to the understanding of the impact of mindful parenting on parenting stress and child psychological difficulties and how mindful parenting may positively impact upon children. An initial literature review highlighted several gaps in the research, including the mixed results of mindful parenting intervention studies, the limited existing research regarding mindful parenting programs (MPPs) for families of children with primary internalizing problems, and the need for an English-language validation of the Interpersonal Mindfulness in Parenting scale (IMP). Given the mixed intervention results, a systematic review and meta-analysis was conducted, which suggested that MPPs are effective at reducing parenting stress and may improve child psychological outcomes. The analysis also indicated that reductions in parenting stress predict reductions in child externalizing and cognitive problems, but not internalizing problems. Confirmatory factor analyses indicated that both 5- and 6-factor models of mindful parenting could be validly measured using the IMP, in both mothers of children and infants. Regression analyses found that mindful parenting, in particular the facet Non-judgmental Acceptance of Parental Functioning, predicted child internalizing problems and parental experiential avoidance, cognitive emotion regulation and unhelpful parent beliefs and behaviors regarding child anxiety. A feasibility study indicated that a MPP might reduce child internalizing problems and improve these parent variables. The theoretical and clinical implications of these results are discussed, including the possibility that MPPs could be used as an adjunct to cognitive-behavioral therapy for child internalizing problems. Thesis strengths and weaknesses are also outlined, and suggestions made regarding avenues for further research in this area.

Aims of the Thesis

The goal of this thesis was to further our understanding of whether mindful parenting programs (MPPs) reduce parenting stress and child psychological problems, in particular child internalizing problems, and the ways in which these programs might deliver benefits to children. To achieve this goal, there were several specific aims. The first was to systematically evaluate the existing evidence of the effectiveness of MPPs for reducing parenting stress and child psychological problems and investigate potential moderators of those outcomes (Chapter 2). Second, this thesis sought to establish whether the model of mindful parenting hypothesized by Duncan and colleagues (Duncan et al., 2009) accurately reflects that construct in English-language parents, by examining the factor structure of the Interpersonal Mindfulness in Parenting scale (IMP) in that population (Chapter 3). The third aim of this thesis was to examine whether mindful parenting, or particular facets of mindful parenting, would predict child internalizing problems and parenting variables related to child internalizing problems, specifically parental experiential avoidance, cognitive emotion regulation and beliefs and behaviors relating to child anxiety (Chapter 4). The final aim was to conduct a randomized controlled pilot study to investigate the feasibility of a MPP for parents concerned about their child's internalizing problems, including its acceptability to those parents and its potential efficacy in reducing parenting stress and child internalizing symptoms, and improving parent factors that might contribute to or maintain child internalizing (Chapter 5).

Summary of Literature Review

Chapter 1 summarized the literature relating to mindful parenting and its relationship to parenting stress and the psychological well-being of children. The literature review showed that correlational studies consistently link more mindful parenting with lower levels of parenting stress and better child psychological outcomes. However, the results of intervention

studies were less consistent. Most of these studies found lowered parenting stress after parents attended a MPP, but some found no improvements. The position was similar with respect to child outcomes, with most but not all studies reporting improvements in child outcomes such as externalizing and internalizing problems. Although very few studies measuring child outcomes were conducted with families of children without a mental health diagnosis, some such studies did report improvements in child symptoms. Given that improvements in parent and child outcomes were found for both clinical and non-clinical families, the clinical status of children alone did not appear to explain why some parents and children improved and others did not. The review also showed that the majority of intervention studies did not randomize participants to an intervention or control group, and many did not explicitly measure mindful parenting. Overall, this limited the strength of the evidence that improvements in mindful parenting were responsible for any reported improvements in parent or child outcomes.

The review also showed that the body of research on mindful parenting interventions has not addressed the question of whether MPPs might have different impacts based on the nature of a child's mental health difficulty, or their age or developmental stage. Most intervention studies have been conducted with groups of families where all or most of the children had primary externalizing diagnoses. In contrast, in families of children with primary internalizing problems, there were no studies investigating whether MPPs reduce parenting stress and only one study investigating the reduction of internalizing symptoms. In relation to age, some interventions have been targeted for families with children at a particular developmental stage, such as infants or adolescents. However, none of the studies conducted to date with children of a broader age range have separately assessed the impacts of MPPs for the younger and older children. Lastly, the review identified that the model of mindful parenting proposed by Duncan and colleagues (Duncan et al., 2009) had not been empirically

tested in an English-language population, despite several studies of translated versions of the IMP failing to support that proposed model (for example, de Bruin et al., 2014).

Summary of Systematic Review and Meta-analysis

Given that the literature review identified mixed results for parent and child outcomes after mindful parenting interventions, and no existing systematic review of these intervention studies, a systematic review and meta-analysis was conducted as part of this thesis. The systematic review and meta-analysis in Chapter 2 identified 25 independent, quantitative studies of MPPs. Eighteen of those studies used a single-group design, six were randomized controlled trials (RCTs) and one used a non-randomized convenience control group. In most studies (n = 20), participating families were referred for clinical assistance due to their child's mental health diagnoses. Sixteen studies provided the MPP to parents only (including one mother/infant group), and nine studies provided the MPP to parents and also provided separate mindfulness training to children of the participating parents. All MPPs in the studies reviewed were delivered to parents in a group format, over a period of 6 to 12 weeks. The total number of hours of training ranged from 9 to 27 hours.

Meta-analysis indicated that MPPs are responsible for reduced parenting stress. Reductions tend to be small immediately after the program, but then increase to moderate two months later. The parenting stress outcome was not moderated by child clinical status (clinical versus non-clinical), child age (child under 12 years versus adolescent 12 years or over) or the length of the mindfulness program. There were not enough studies for a moderator analysis regarding parent clinical status. Reductions in parenting stress were larger in studies where the program was provided to the parent only, than to parent and child. However, as almost all studies providing mindfulness training to both parent and child involved children with attention deficit hyperactivity disorder (ADHD), this result may be

related to the nature of the child's difficulties rather than who participated in the mindfulness training.

It remains unclear whether MPPs result in improved child outcomes, as there were insufficient studies to use meta-analysis to calculate between-group effects. However, MPPs were associated with small pre- to post-program within-group improvements in child outcomes, which were maintained at 2-month follow-up. Child outcomes were not moderated by child age (child versus adolescent), intervention participants (parent-only versus parent and child), or length of the mindfulness program. There were insufficient studies to check whether parent or child clinical status moderated child outcomes. Meta-regression indicated that reductions in parenting stress predicted reductions in child externalizing and cognitive problems, but not reductions in child internalizing problems. Despite the relatively small size of most studies, publication bias was deemed trivial. Overall, though, the quality of studies was problematic, since most did not use a randomized, controlled design.

Summary of Confirmatory Factor Analyses

Despite the principal research tool for measuring mindful parenting being developed in an English-language population, the literature review showed that no validation of the IMP in an English-language parent group had been published. Chapter 3 therefore presented confirmatory factor analyses (CFA) of the IMP in English-language groups of mothers of children aged 3-18 years and mothers of infants aged 0-2 years. CFA was used rather than exploratory factor analysis, as exploratory analyses had already resulted in similar models of mindful parenting being identified in two different Western populations (de Bruin et al., 2014; Moreira & Canavarro, 2017). The fit of three models of mindful parenting was examined: the model hypothesized by Duncan et al. (2009), and the empirically obtained models of de Bruin et al. (2014) and Moreira and Canavarro (2017).

The CFA showed the Duncan et al. (2009) model to be a poor fit in English-speaking mothers of children and infants. However, based on the fit indices examined, both the de Bruin et al. (2014) and Moreira and Canavarro (2017) models were an adequate to good fit in both groups, with the de Bruin et al. model requiring fewer modifications to achieve good fit. In the model proposed by Duncan et al., items regarding non-judgment, compassion and emotional awareness were grouped together, regardless of whether they related to the parent or child. However, in the CFA conducted for this thesis, these items loaded onto separate parent- and child-focused facets, as was the case in several Western and Asian studies using translated versions of the IMP. The replication of this result in an English-language population suggests that the separation of parent- and child-focused items is integral to the construct of mindful parenting, and does not merely result from translation of the IMP or cultural differences in parenting.

Summary of Regression Analyses

As the meta-analysis in Chapter 2 found that reductions in parenting stress did not predict reductions in child internalizing problems, this thesis explored alternative ways in which child internalizing might be impacted by mindful parenting. The study presented in Chapter 4 used regression analyses to assess which facets of mindful parenting uniquely predict child internalizing problems and several parent variables believed to contribute to or maintain child internalizing problems: parental experiential avoidance, cognitive emotion regulation, and unhelpful beliefs and behaviors relating to child anxiety. To determine whether those facets differed for parents depending on child age, the analyses for the parent variables were conducted separately for mothers of children and infants. The participants were 170 mothers of children aged 3-18 years and 75 mothers of infants aged 0-2 years, who were recruited from the community to complete measures of child internalizing and related parent variables.

Child (2-18 years) internalizing problems were uniquely predicted by the Non-judgmental Acceptance of Parental Functioning (NJAPF) and Emotional Awareness of the Child (EAC) facets of mindful parenting, over and above child age and maternal internalizing symptoms. In relation to parent outcomes, there were some similarities in the facets of mindful parenting that emerged as unique predictors for the two groups of mothers. For mothers of children and infants, NJAPF was the facet that most strongly predicted parental experiential avoidance and maladaptive cognitive emotion regulation, and Emotional Awareness of Self (EAS) was the facet that most strongly predicted adaptive cognitive emotion regulation. There were also differences between the two groups. Compassion for the Child (CC) was another unique predictor of parental experiential avoidance for mothers of children, whereas both EAS and Emotional Non-reactivity in Parenting (ENRP) were predictors for mothers of infants. Both EAC and ENRP were unique predictors of maladaptive cognitive emotion regulation for mothers of children, but this outcome was instead predicted by CC in mothers of infants. Overall, NJAPF emerged as the aspect of mindful parenting that was most important as a unique predictor of parental experiential avoidance, cognitive emotion regulation and unhelpful beliefs and behaviors regarding child anxiety. As these parent factors are predicted by mindful parenting and are thought to contribute to or maintain child internalizing problems, they may explain the relationship between mindful parenting and child internalizing problems.

Summary of Randomized Controlled Pilot Study

Chapter 4 established that mindful parenting predicts child internalizing problems and several parent variables that may contribute to or maintain child internalizing problems. The feasibility study presented in Chapter 5 was designed to build on those findings. The study was a randomized controlled pilot trial comparing an 8-week MPP to a waitlist control. It assessed four domains of feasibility: (1) demand for a MPP amongst parents concerned about

their child's internalizing symptoms; (2) program acceptability; (3) potential efficacy of the program for improving parenting stress, child internalizing symptoms, and parent variables that contribute to or maintain child internalizing problems; and (4) the possibility of the program being successful if made available to that population of parents. Twenty-five parents of children aged 3 to 18 years, with self-reported concerns regarding their child's internalizing symptoms, were recruited from the community to participate. All parents completed measures of mindful parenting, parenting stress, child internalizing problems, parental experiential avoidance, cognitive emotion regulation and parent beliefs about child anxiety. These measures were completed at four time points: pre-, mid-, and post-program, and two months following the program. Intervention group parents also completed weekly in-session reports about their coping with specific, stressful parenting moments, and qualitative feedback on whether and how the program had assisted them in coping with their child's internalizing symptoms.

Results indicated the MPP was feasible for parents with concerns about their child's internalizing problems. Recruitment, attendance and completion rates suggested there was demand for the program. For example, completion rates were in line with those seen in MPPs run for other groups of parents. Program acceptability was established through parent reports that the program had been useful and valuable to them and that they would recommend it to others. Parent reports at post-program and two-month follow-up provided preliminary evidence for the efficacy of the program, with the intervention group improving by a moderate to large amount compared to waitlist, for school-aged child internalizing problems and most parent outcomes. The weekly in-session reports from intervention group parents also showed that parents improved in their ability to cope with stressful parenting situations, as they were occurring. Finally, qualitative feedback suggested that a MPP would likely be successful for parents with concerns regarding their child's internalizing problems, as these

parents confirmed that the program had helped them with their parenting; in particular, by strengthening their ability to be accepting and empathic with their child. Overall, the pilot trial indicated that MPPs could help parents reduce the level of stress that they encounter in their parenting, while also improving on some of the parent factors that tend to contribute to or maintain child internalizing problems. This may in turn reduce the level of internalizing symptoms that their child experiences.

Theoretical Implications

The results of the studies conducted for this thesis have some implications for current theoretical perspectives on mindful parenting. First, the 5-dimension model of mindful parenting developed by Duncan and colleagues (Duncan et al., 2009) was found to be a poor fit to the data for English-language mothers. Instead, consistent with several earlier analyses using translated versions of the IMP (for example, Moreira & Canavarro, 2017), both 5- and 6-facet models in which parent- and child- focused items relating to emotional awareness, non-judgment and compassion loaded on to distinct factors, were found to fit well. Given that the IMP was originally developed in English, and the Duncan et al. model of mindful parenting did not involve this separation of parent- and child-focused items, it could have been argued that the different structure resulted from the translation process or cultural differences. However, as the same separation has now been found in English-language mothers, it appears that the construct of mindful parenting is best represented by a model that distinguishes between parent- and child-focused emotional awareness, non-judgment and compassion. While a parent's capacity in these areas regarding themself is related to their capacity regarding their child (Havighurst et al., 2010; Lathren et al., 2020), some parents have more difficulty with one or the other. For example, some will find it easier to act kindly or non-judgmentally towards a child but may struggle to do so towards themselves (Bögels & Restifo, 2013). A model of mindful parenting should recognise this self/other divergence.

The empirical validation of a model of mindful parenting in English-language mothers enabled the relationships between the specific facets of mindful parenting, child internalizing problems and related parent variables to be explored. Of these facets, NJAPF was the strongest unique predictor of child internalizing and related parent variables (Chapter 4) and had a large improvement after the MPP (Chapter 5). The NJAPF facet is comprised of items relating to a parent's tendency to be critical, harsh and blaming towards themselves. It therefore appears that the aspect of mindful parenting that may be most relevant in improving child internalizing symptoms is a parent's ability to be accepting and compassionate towards themself. It is interesting that it is the more inward-facing, intrapersonal aspects of non-judgment or self-compassion that are most important regarding child internalizing difficulties, given that mindful parenting has been argued to improve child outcomes by improving parent interactions with children (Duncan et al., 2009; Parent et al., 2016). However, this finding aligns with research showing that greater self-compassion is associated with reduced psychological distress through improved emotion regulation, and that building self-compassion may decrease distress (Diedrich et al., 2017; Inwood & Ferrari, 2018; Kirby et al., 2017). Parents who consistently take an accepting, compassionate stance towards themselves will be more likely to have children who do so, and who are therefore less likely to experience anxiety or distress themselves (Marsh et al., 2018; Morris et al., 2017).

Finally, while the findings of this thesis broadly support the view that more mindful parenting benefits children through lowered parenting stress and improved parenting practices (Bögels et al., 2010; Duncan et al., 2009; Parent et al., 2016), they also suggest that the mechanisms of action operating between mindful parenting and child outcomes may differ depending on the nature of the child's problems. Specifically, the meta-analysis (Chapter 2) found that reductions in child externalizing and cognitive problems, but not internalizing problems, were predicted by reductions in parenting stress. The studies detailed

in Chapters 4 and 5 then identified several alternative potential mechanisms of action in relation to child internalizing, including parental experiential avoidance, cognitive emotion regulation and unhelpful parent beliefs regarding child anxiety. As each of these parent variables may contribute to or maintain child internalizing problems (Settipani & Kendall, 2017; Tiwari et al., 2008; Wald et al., 2018), it is possible that improvements in these parent variables following a MPP would flow on to benefit children, for example through parental modelling of more adaptive self-regulation. Of course, the identification of these alternative possible pathways from mindful parenting to child internalizing symptoms does not rule out a role for parenting stress, but at present there is insufficient evidence to draw conclusions regarding this.

Clinical Implications

A number of clinical implications arise from the findings of this thesis. First, this thesis has provided preliminary evidence that MPPs can reduce parenting stress and child internalizing problems, for community-recruited families concerned primarily about their child's internalizing difficulties. MPPs may therefore have a place in helping families to manage child internalizing problems. Cognitive-behavioral therapy (CBT) has substantial empirical backing as a treatment for child internalizing problems (McPherson & Fristad, 2014; Murray & Cartwright-Hatton, 2006), and is therefore a first line of treatment for child internalizing problems. However, children in stressed families, such as those where parents suffer from their own mental health problems or regulatory difficulties, do not benefit to the same extent from CBT (Compton et al., 2014; Eckshtain et al., 2018). For these families, it may be necessary to specifically target the parent's stress, to improve their ability to effectively engage in the child's treatment. MPPs could therefore be considered as an adjunct treatment to CBT, for the purpose of reducing parenting stress to benefit the family. In addition, the preliminary efficacy of the program described in Chapter 5 with community-

recruited parents suggests MPPs might also be regarded as an appropriate preventive program for parents who want help to cope with sub-clinical child internalizing difficulties or do not wish to obtain a clinical diagnosis for their child.

The results of the feasibility trial described in Chapter 5 indicate that reducing child internalizing difficulties through mindful parenting does not require direct involvement of the child. Although research regarding the efficacy of parent-only programs for child internalizing problems is relatively sparse, other studies have also shown they can be successful. For example, Lebowitz et al. (2020) found a parent-only program aimed at reducing parent accommodation of child anxiety to be no less effective than child-only CBT and a review by Yap et al. (2016) found no difference in reductions in child internalizing between preventive programs that involved parents only or those that included children to some extent. There are a number of reasons why a family might choose a parent-only program in preference to involving their child in therapy. They may be useful when children are too young to attend therapy (van der Sluis et al., 2012) or when child developmental problems prevent cognitive intervention (Lebowitz et al., 2020). Importantly, working with parents alone means children are not pathologized by being seen as needing treatment (van der Sluis et al., 2012). It could be argued that child-to-parent effects, such as child anxiety eliciting more controlling parent behavior (Silverman et al., 2021), necessitate the involvement of children in therapy for their own internalizing problems when possible. However, MPPs specifically seek to build parents' empathy with their child and skills to tolerate negative child emotions (Bögels & Restifo, 2013), which may help reduce the likelihood of parents' unhelpfully responding to child internalizing symptoms and thus reduce the impact of child-to-parent effects without direct child involvement in therapy.

As noted above, the studies described in Chapters 4 and 5 found that mindful parenting is related to and may improve child internalizing symptoms and parental

experiential avoidance, cognitive emotion regulation and unhelpful beliefs regarding child anxiety. NJAPF was the facet of mindful parenting most closely linked to these child and parent variables. Like NJAPF, parental experiential avoidance and cognitive emotion regulation also involve non-judgment and acceptance (Garnefski et al., 2001; Tiwari et al., 2008). This suggests that for families concerned about child internalizing problems, it would be most helpful for MPPs to assist parents to decrease their tendency to be judgmental of themselves as parents, and instead build their ability to be accepting of themselves. While the concepts of non-judgment and acceptance are typically woven throughout a MPP, including in the attitudes modelled by a facilitator in meditation practices and group inquiries (for example, Bögels & Restifo, 2013), an enhanced focus on these attitudes could be beneficial to parents.

Finally, child age should be considered when offering MPPs to families. Although the empirical test of models of mindful parenting (Chapter 3) revealed that the construct of mindful parenting was very similar for mothers of children aged 3-18 years and infants aged 0-2 years, the later studies (Chapters 4 and 5) suggested some differences in the relationship between mindful parenting, child internalizing problems and parent variables related to child internalizing for these two groups. For example, EAC was a unique predictor of parent outcomes only for mothers of children, not for mothers of infants. This could be because older children are more self-regulated and thus better at moderating their expression of emotion, such that greater emotional awareness regarding the child becomes more relevant for parents of older children. For mothers of infants, unlike mothers of children, high levels of CC predicted both helpful and unhelpful cognitive regulation strategies. It might therefore be of benefit to families to tailor MPPs to suit parents of children of different ages. For example, for parents of children, it may be helpful to enhance aspects of the program that could develop parents' non-judgmental acceptance of themselves. For parents of infants,

consideration could be given to how parents can balance their compassion for their child with care for themselves, to lessen the likelihood of them ruminating or blaming themselves for the numerous challenges that can be faced during infancy such as crying, sleeping or feeding difficulties (Östberg & Hagekull, 2000).

Thesis Strengths

This thesis has several strengths. The studies conducted for the thesis built upon each other, with those detailed in Chapters 3 to 5 being developed in response to the findings of the initial literature review and the systematic review and meta-analysis regarding the effectiveness of MPPs. The meta-analysis was the first quantitative evaluation of the effectiveness of MPPs to be published, which contributed to the field of research by providing a snapshot of the current evidence for effectiveness of MPPs for parenting stress and child psychological outcomes, and guidance on areas for further research. Similarly, the CFA in Chapter 3 was the first published empirical validation of the IMP conducted with English-language parents. The English-language validation was important because it confirmed that the major difference between the originally hypothesized model of mindful parenting, which was developed in English-language parents, and the models emerging from translated versions of the IMP, was not an artefact of translation but a core feature of the construct of mindful parenting. Identification of an appropriate model for use with English-language parents also enabled the examination in Chapter 4 of which facets of mindful parenting were most important as predictors of child internalizing problems and related parent variables, which resulted in NJAPF being identified as being of particular relevance in connection with child internalizing problems and parent variables that could contribute to or maintain child internalizing.

The pilot study in Chapter 5 made a valuable contribution to the mindful parenting literature. The limited use of RCTs in much of the existing research precludes researchers

from drawing conclusions regarding the effectiveness of MPPs. Additionally, some of the existing research has not explicitly measured mindful parenting, which also makes it less clear that post-program improvements in mindful parenting were responsible for outcome changes. The pilot study went some way to addressing both these issues by using a randomized controlled design and comparing the reported change in mindful parenting for each of the intervention and waitlist groups, thus reducing the likelihood that outcome changes were due to other factors. It also went further than most previous studies by incorporating an in-session task, in which parents visualised and re-experienced their most stressful or difficult parenting situation in the preceding week and reported on their coping in that situation. This task provided preliminary evidence that MPPs can improve not only parents' general tendency to be more mindful and self-regulated, but also their ability to do this "in the moment" with their child, which is particularly relevant for parents with tendencies to interpret challenging situations as threatening, and to intervene, such as parents of children with internalizing problems (Creswell et al., 2005; McLeod et al., 2007).

The studies in this thesis recruited mothers from the community, rather than mothers of children with a diagnosed internalizing disorder. This is a strength because the existing literature has focused upon MPPs for families of children with diagnosed mental health conditions, and the results from the small number of studies run with families recruited from the community have been more mixed. However, help-seeking families of undiagnosed children may experience similar levels of parenting stress as those of diagnosed children (Potharst et al., 2018a), so it is important to provide these families with options for reducing their stress and the negative consequences that might flow from that stress. This might include families who prefer not to seek out a diagnosis for their child, for example out of a desire not to label their child or pathologize their difficulties. The pilot trial provides preliminary evidence that MPPs could improve outcomes for these families. Just as general

mindfulness training is helpful for the non-clinical population (Khoury et al., 2015; Querstret et al., 2020), making MPPs widely available for parents in the broader community is likely to help them manage the normal levels of stress associated with parenting and thus prevent or reduce the risk of future child problems connected with parenting stress.

Finally, this thesis considers the relevance of child age in connection with MPPs, which has not been explicitly addressed in the existing research. While the CFA confirmed similar models of mindful parenting for mothers of children and infants, the regression analyses in Chapter 4 and the pilot trial in Chapter 5 demonstrated some differences in the relationship between mindful parenting, child internalizing problems and parent variables relating to child internalizing, depending on child age. This is of relevance to researchers and clinicians involved in the designing and running of MPPs. For example, it may be beneficial to tailor the content of MPPs specifically for families of children of a particular age range, or to offer MPPs to families with children of a more limited age range, such as to families with primary-school aged children, rather than to a broad group such as infants through to adolescents.

Thesis Limitations

There are several limitations to acknowledge in connection with this thesis. First, in relation to sample characteristics, the parents who participated in the CFA, regression analyses and pilot trial were all, or almost all, mothers. It is therefore important to note that these studies only provide evidence as to the structure of mindful parenting and its relationships with child internalizing problems in English-language mothers, not in parents generally. Also in relation to the sample, the participants in the CFA, regression analyses and pilot study appear to be a relatively homogenous group, given that the percentage of participants with a University Bachelor or post-graduate degree was at least 74% in those studies. This may be related to the use of Facebook as a recruitment tool for these studies.

While Facebook is generally comparable to traditional methods of recruitment, such as mail or phone, in terms of recruiting a sample of participants representative of the intended population, it does tend to recruit participants with a higher level of education than the general community (Thornton et al., 2016). The findings of this thesis therefore do not necessarily speak to the ways in which mindful parenting may benefit the broader socio-economic spectrum of families.

In relation to assessment methods, the studies conducted in this thesis used parent reports of child internalizing problems and parent variables. The use of a single informant design is likely to introduce systematic measurement error into the data, particularly in the context of a program involving a significant amount of contact time, where parents may unconsciously report greater changes due to their investment of time in the program. In addition, the outcomes in the regression analyses were assessed only at one point in time, so although it is possible that mindful parenting influences child internalizing problems and related parent variables, the cross-sectional data in that study does not establish the causal direction of relationships between these variables. To some extent, however, the results of the pilot trial mitigate this weakness and support a conclusion that mindful parenting impacts upon child internalizing and related parent variables, since these outcomes improved as expected both immediately after and two months following the MPP.

The pilot trial provided useful evidence that MPPs are feasible for parents concerned about their child's internalizing difficulties, in terms of the demand for and acceptability of the program, and its likely efficacy in reducing parenting stress and child internalizing problems and improving other aspects of parenting that might otherwise contribute to or maintain child internalizing. However, given the small sample size used in the pilot trial, the indications of efficacy are preliminary only and must be followed up with an appropriately powered RCT. Once this has been done, firmer conclusions can be drawn about whether

MPPs improve outcomes for families concerned primarily about their child's internalizing problems.

Future Research

As noted above, a full-scale RCT is required to confirm the benefits of MPPs for parents of children with primary internalizing difficulties. This could be done with parents recruited from both clinical and community settings. It would be appropriate to conduct this trial initially using a waitlist control group, as there are only a limited number of MPP studies utilising a randomized controlled design and no other widely available evidence-based programs specifically targeting parenting stress, against which to compare MPPs. If a full-scale trial found the program to be efficacious for reducing primary internalizing problems for children with clinically diagnosed internalizing disorders, MPPs could be compared against other evidence-based treatments for child internalizing, such as CBT. This would provide evidence as to whether MPPs should be offered to parents only as an adjunct to existing evidence-based child treatments, to reduce their parenting stress or improve their self-regulation so as to support their child's treatment, or whether MPPs could be offered as an alternative treatment for child internalizing problems, for example for families who would prefer to pursue parent-only treatment. CBT retention rates and outcomes could also be compared for families where parents attended a MPP prior to child- or family- based CBT, and families who attended CBT only. It is possible that a MPP could equip all families to optimise the benefits of CBT, even when they do not report elevated levels of parenting stress.

Another avenue of further research is suggested by a finding from the regression study in Chapter 4. Of the six facets of mindful parenting, NJAPF was the most important predictor of child internalizing problems, and of parental experiential avoidance, maladaptive cognitive emotion regulation and unhelpful beliefs and behaviors relating to child anxiety.

NJAPF encompasses a parent's tendency to be harsh or self-critical, versus accepting or self-compassionate, regarding their own parenting. This finding is in line with research on self-compassion, which has shown that greater self-compassion predicts both better emotion regulation and lower distress (Diedrich et al., 2017; Inwood & Ferrari, 2018), and that compassion-based intervention programs result in reductions in adults' anxiety (Kirby et al., 2017). The self-judgment and isolation aspects of self-compassion, both of which are represented by items in the NJAPF scale, are also stronger predictors of distress than mindfulness (Van Dam et al., 2011). MPPs such as the Bögels and Restifo (2013) program already include self-compassion practices. However, given the relevance of self-compassion to parent well-being, and the finding that NJAPF was the strongest predictor of child internalizing problems, future research should consider whether boosting the self-compassion component of MPPs would further improve outcomes for parents and children.

One of the identified weaknesses of this thesis is the lack of involvement of fathers in the research. Although the individual studies were not initially designed to be limited to mothers, the recruitment process across all studies attracted virtually no interest from fathers. Future research may therefore need to specifically target fathers as participants. Although fathers may generally be less mindful than mothers (Moreira & Canavarro, 2015), one study has found the structure of mindful parenting to be the same for mothers and fathers (Pan et al., 2019). However, this study was conducted with parents from China and thus may not generalise to English-language parents. As it is therefore unclear whether the construct of mindful parenting, as measured by the IMP, differs for Western mothers and fathers, the structure of mindful parenting should now be confirmed in a sample of Western fathers.

Confirmation of the structure of mindful parenting in fathers would then facilitate further research on other aspects of fathers' mindful parenting, such as whether NJAPF was as important to the relationships with child internalizing problems and related parent

variables as it was for mothers. As noted above, NJAPF involves an accepting, kind relationship with oneself, which is consistent with the evolutionary view of mothers as providing a safe, nurturing environment for children (Paquette, 2004). Higher levels of NJAPF in mothers could lead to lower levels of child internalizing through the mother's modelling of healthier forms of emotional self-regulation, such as acceptance. In contrast, though, the evolutionary view of fathers is that they are more robust, risk-taking and outward-facing with their children (Paquette, 2004). This is thought to decrease the risk of child internalizing problems such as anxiety by challenging children to explore and engage with the world (Bögels & Phares, 2008; Majdandžić et al., 2014). It is therefore possible that NJAPF would be less relevant to the relationship between fathers' parenting and child internalizing problems, than it is for mothers.

Conclusion

Raising a child with primary internalizing problems can be stressful for parents, even though the difficulties may be less obvious to others than those faced by parents of children with primary externalizing problems. For example, parents may be faced with withdrawn or negative moods, excessive worrying or catastrophizing, frequent attempts to avoid engaging in various activities, or school refusal. Given the negative impacts of parenting stress and the limited research on MPPs for families of children with primary internalizing problems, the goal of this thesis was to investigate whether MPPs reduce parenting stress and child internalizing problems for these families, and to identify parent factors through which mindful parenting might reduce internalizing problems.

The findings of this thesis indicate that mindful parenting could reduce parenting stress and child internalizing problems in families of children with primary internalizing concerns. MPPs may benefit these families whether they are recruited through clinical or community channels, but the results of the feasibility trial suggest they may be most helpful

in reducing internalizing symptoms in school-aged children, rather than pre-school aged children. Although it remains unclear whether mindful parenting reduces child internalizing by reducing parenting stress, other potential pathways were identified. Mindful parenting, in particular the ability to be non-judgmental regarding oneself as a parent, may reduce child internalizing problems by reducing parents' general tendency to regulate their emotions and think about anxiety in unhelpful ways. Importantly, mindful parenting also appears to improve the ability of parents of children with internalizing symptoms to cope *in-the-moment* with stressful or difficult parenting situations, which could lessen the likelihood that these parents will find these challenging situations threatening and avoid them, thus maintaining their child's symptoms.

Given the potential benefits of MPPs for families of children with primary internalizing problems, MPPs could be considered as an adjunct treatment for stressed parents having difficulty engaging with CBT for child internalizing problems, as a treatment option for child internalizing problems when parents do not wish to involve their child in therapy, or as a preventive program for parents who wish to get help with child difficulties before they become clinically significant. As the findings of this thesis regarding child internalizing problems are preliminary, there is significant scope for further research on this topic.

References

Abidin, R. R. (1983). *Parenting Stress Index manual*. Charlottesville: Pediatric Psychology Press.

Abidin, R.R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*, 407-412. doi: 10.1207/s15374424jccp2104_12

Abidin, R. R. (1995). *Parenting Stress Index: Professional Manual 3rd ed*. Odessa, FL: Psychological Assessment Resources Inc.

Achenbach, T. M. (1991a). *Manual for the Youth Self-Report and 1991 Profile*. Burlington: University of Vermont.

Achenbach, T.M. (1991b). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington: University of Vermont.

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA Preschool Forms & Profiles*. Burlington: University of Vermont, Research Centre for Children, Youth, and Families.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA Preschool Forms & Profiles*. Burlington: University of Vermont, Research Centre for Children, Youth, and Families.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*, 217-237. doi: 10.1016/j.cpr.2009.11.004

Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., & Shaffer, S. (2005). The relationships between parenting stress, parenting behavior and preschoolers' social competence and behavior problems in the classroom. *Infant and Child Development, 14*, 133-154. doi: 10.1002/icd.385

Antony, M.M., Bieling, P.J., Cox, B.J., Enns, M.W. and Swinson, R.P. (1998) Psychometric Properties of the 42-Item and 21-Item Versions of the Depression Anxiety Stress Scales (DASS) in Clinical Groups and a Community Sample. *Psychological Assessment*, 10, 176-181. doi: 10.1037/1040-3590.10.2.176

Auyeung, B., Baron-Cohen, S.,Wheelwright, S., & Allison, C. (2008). The autism spectrum quotient: children's version (AQ-Child). *Journal of Autism and Developmental Disorders, 38*, 1230–1240. doi: 10.1007/s10803-007-0504-z

Axford, N., Lehtonen, M., Kaoukji, D., Tobin, K., & Berry, V. (2012). Engaging parents in parenting programs: Lessons from research and practice. *Children and Youth Services Review*, 34, 2061-2071. doi.org/10.1016/j.childyouth.2012.06.011

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology Science and Practice, 10,* 125–143. doi: 10.1093/clipsy/bpg015

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27-45. doi: 10.1177/1073191105283504

Baker, B. L., McIntyre, L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behavior problems and parenting stress over time. *Journal of Intellectual Disability Research, 47*, 217-230. doi: 10.1046/j.1365-2788.2003.00484.x

Barroso, N. E., Mendez, L., Graziano, P. A., & Bagner, D. M. (2018). Parenting stress through the lens of different clinical groups: A systematic review & meta-analysis. *Journal of Abnormal Child Psychology, 46*, 449-461. doi: 10.1007/s10802-017-0313-6

Bayer, J. K., Hiscock, H., Ukoumunne, O. C., Price, A., & Wake, M. (2008). Early childhood aetiology of mental health problems: A longitudinal population-based study. *The Journal of Child Psychology and Psychiatry, 49*, 1166-1174. doi: 10.1111/j.1469-7610.2008.01943.x

Bazzano, A., Wolfe, C., Zylowska, L., Wang, S., Schuster, E., Barrett, C., & Lehrer, D. (2015). Mindfulness based stress reduction (MBSR) for parents and caregivers of individuals with developmental disabilities: A community-based approach. *Journal of Child and Family Studies, 24*, 298-308. doi: 10.1007/s10826-013-9836-9

Bech, P., Olsen, L. R., Kjoller, M., & Rasmussen, N. (2003). Measuring well-being rather than the absence of distress symptoms: A comparison of the SF-36 Mental Health subscale and the WHO-5 Well-Being Scale. *International Journal of Methods in Psychiatric Research, 12*, 85–91. doi: 10.1002/mpr.145

Beck, A., Steer, R., & Brown, G. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.

Beer, M.,Ward, L., & Moar, K. (2013). The relationship between mindful parenting and distress in parents of children with an autism spectrum disorder. *Mindfulness, 4*, 102-112. doi: 10.1007/s12671-012-0192-4

Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12*, 463-472. doi: 10.1177%2F0265407595123009

Biederman, J., Petty, C. R., Dolan, C., Hughes, S., Mick, E., Monuteaux, M. C., & Faraone, S. V. (2008). The long-term longitudinal course of oppositional defiant disorder and conduct disorder in ADHD boys: Findings from a controlled 10-year prospective longitudinal follow-up study. *Psychological Medicine, 38*, 1027-1036. doi: 10.1017/S0033291707002668

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230-241. doi: 10.1093/clipsy/bph077

Bloomfield, L., & Kendall, S. (2012). Parenting self-efficacy, parenting stress and child behavior before and after a parenting programme. *Primary Health Care Research & Development*, *13*, 364-372. doi:10.1017/S1463423612000060

Boekhorst, M. G., Hulsbosch, L. P., Nyklíček, I., Spek, V., Kastelein, A., Bögels, S., Pop, V. J. M. & Potharst, E. S. (2021). An online mindful parenting training for mothers raising toddlers: Assessment of acceptability, effectiveness, and personal goals. *Mindfulness*, *12*(2), 519-531. doi: 10.1007/s12671-020-01542-z

Boekhorst, M. G., Potharst, E. S., Beerthuizen, A., Hulsbosch, L. P., Bergink, V., Pop, V. J. M., & Nyklíček, I. (2020). Mindfulness during pregnancy and parental stress in mothers raising toddlers. *Mindfulness*, *11*, 1747-1761. doi: 10.1007/s12671-020-01392-9

Bögels, S. (2013). *MYmind Mindfulness for Children and Adolescents With ADHD: Therapist's Manual*. Amsterdam: University of Amsterdam.

Bögels, S. M., Hellemans, J., van Deursen, S., Romer, M., & van der Meulen, R. (2014). Mindful parenting in mental health care: Effects on parental and child psychopathology, parental stress, parenting, coparenting and marital functioning. *Mindfulness, 5*, 536-551. doi: 10.1007/s12671-013-0209-7

Bögels, S. M., Hoogstad, B., van Dun, L., de Schutter, S., & Restifo, K. (2008). Mindfulness training for adolescents with externalizing disorders and their parents. *Behavioral and Cognitive Psychotherapy, 36*, 193-209. doi: 10.1017/S1352465808004190

Bögels, S. M., Lehtonen, A., & Restifo, K. (2010). Mindful parenting in mental health care. *Mindfulness, 1,* 107-120. doi: 10.1007/s12671-010-0014-5

Bögels, S. M., & Phares, V. (2008). Fathers' role in the etiology, prevention and treatment of child anxiety: A review and new model. *Clinical Psychology Review, 28*, 539-558. http://dx.doi.org/10.1016/j.cpr.2007.07.011

Bögels, S. M., & Restifo, K. (2013). *Mindful parenting in mental health care*. New York: Springer.

Bögels, S.M., & Restifo, K. (2014). *Mindful Parenting: A Guide for Mental Health Practitioners*. New York, NY: Springer.

Bögels, S. M., & van Melick, M. (2004). The relationship between child-report, parent self-report, and partner report of perceived parental rearing behaviors and anxiety in children and parents. *Personality & Individual Differernces, 37*, 1583–1596. doi: 10.1016/j.paid.2004.02.014

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. Chichester, UK: John Wiley.

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., Bakken, S., Kaplan, C. P., Squiers, L., Fabrizio, C., & Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine, 36*, 452-457. doi: 10.1016/j.amepre.2009.02.002

Branje, S. J., Hale, W., Frijns, T., & Meeus, W. (2010). Longitudinal associations between perceived parent-child relationship quality and depressive symptoms in adolescence. *Journal of Abnormal Child Psychology, 38*, 751–763. doi: 10.1007/s10802-010-9401-6

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77–101. doi: 10.1191/1478088706qp063oa

Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2020). The online survey as a *qualitative* research tool. *International Journal of Social Research Methodology*, doi: 10.1080/13645579.2020.1805550

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848. doi:10.1037/0022-3514.84.4.822

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*, 211-237.

Brown, K. W., West, A. M., Loverich, T. M., & Biegel, G. M. (2011). Assessing adolescent mindfulness: Validation of an adapted Mindful Attention Awareness Scale in adolescent normative and psychiatric populations. *Psychological Assessment, 23*, 1023-1033. doi: 10.1037/a0021338

Burgdorf, V. L., Szabó, M., & Abbott, M. A. (2019). The effect of mindfulness interventions for parents on parenting stress and youth outcomes: A systematic review and meta-analysis. *Frontiers in Psychology, 10*. doi: 10.3389/fpsyg.2019.01336

Burgdorf, V. L., & Szabó, M. (2021). The Interpersonal Mindfulness in Parenting Scale in mothers of children and infants: Factor structure and associations with child internalizing problems. *Frontiers in Psychology, 11*. doi: 10.3389/fpsyg.2020.633709

Busch, A. M., Wagener, T. L., Gregor, K. L., Ring, K. T., & Borrelli, B. (2011). Utilizing reliable and clinically significant change criteria to assess for the development of depression during smoking cessation treatment: The importance of tracking idiographic change. *Journal of Addictive Behavior, 36*, 1228-1236. doi: 10.1016/j.addbeh.2011.07.031

Byrne, B. M. (2010). *Structural equation modelling with AMOS* (2nd ed.) Ottawa: Routledge.

Campbell, K., Thoburn, J. W., & Leonard, H. D. (2017). The mediating effects of stress on the relationship between mindfulness and parental responsiveness. *Couple and Family Psychology: Research and Practice, 6*, 48-59. doi: 10.1037/cfp0000075

Carona, C., Rijo, D., Salvador, C., Castilho, P. & Gilbert, P. (2017). Compassion-focused therapy with children and adolescents. *British Journal of Psychiatric Advances, 23*, 240-252. doi: 10.1192/apt.bp.115.015420

Chan, N., & Neece, C. L. (2018). Parenting stress and emotion dysregulation among childrenwith developmental delays: The role of parenting behaviors. *Journal of Child and Family Studies*. doi: 10.1007/s10826-018-1219-9

Chan, S. M., Poon, S. F. O., & Tang, E. M. H. (2016). Daily hassles, cognitive emotion regulation and anxiety in children. *Vulnerable Children and Youth Studies, 11*, 238-250. doi:10/1080/174501282016.1214887

Chaplin, T. M., Turpyn, C. C., Fischer, S., Martelli, A. M., Ross, C. E., Leichtweis, R. N., Miller, A. B., & Sinha, R. (2018). Parenting-focused mindfulness intervention reduces stress and improves parenting in highly stressed mothers of adolescents. *Mindfulness*. doi: 10.1007/s12671-018-1026-9

Cheron, D. M., Ehrenreich, J. T., & Pincus, D. B. (2009). Assessment of parental experiential avoidance in a clinical sample of children with anxiety disorders. *Child Psychiatry and Human Development*, 40, 383-403. doi: 10.1007/s10578-009-0135-z

Cheung, R. Y. M., Leung, S. S. W., & Mak, W. W. S. (2019). Role of mindful parenting, affiliate stigma, and parents' well-being in the behavioral adjustment of children with autism spectrum sisorder: Testing parenting stress as a mediator. *Mindfulness, 10*, 2352-2362. doi: 10.1007/s12671-019-01208-5

Chorpita, B. F., Yim, L., Moffitt, C. E., Umemoto, L. A., & Francis, S. E. (2000). Assessment of symptoms of DSM-IV anxiety and depression in children: a revised

child anxiety and depression scale. *Behavior Research & Therapy, 38*, 835–855. doi: 10.1016/S0005-7967(99)00130-8

Clarke-Stewart, K. A., Allhusen, V. D., McDowell, D. J., Thelen, L., & Call, J. D. (2003). Identifying psychological problems in young children: How do mothers compare with child psychiatrists? *Journal of Applied Developmental Psychology, 23*, 589-624. doi: 10.1016/S0193-3973(03)00006-6

Coatsworth, J. D., Duncan, L. G., Greenberg, M. T., & Nix, R. L. (2010). Changing parents' mindfulness, child management skills and relationship quality with their youth: Results from a randomised pilot intervention trial. *Journal of Child and Family Studies, 19,* 203-217. doi: 10.1007/s10826-009-9304-8

Coatsworth, J. D., Duncan, L. G., Greenberg, M. T., & Nix, R. L. (2010). Changing parents' mindfulness, child management skills and relationship quality with their youth: Results from a randomised pilot intervention trial. *Journal of Child and Family Studies, 19,* 203-217. doi: 10.1007/s10826-009-9304-8

Coatsworth, J. D., Duncan, L. G., Nix, R. L., Greenberg, M. T., Gayles, J. G., Bamberger, K. T., Berrena, E., & Demi, M. A. (2015). Integrating mindfulness with parent training: Effects of the mindfulness-enhanced strengthening families program. *Developmental Psychology, 51*(1), 26–35. doi.org/10.1037/a0038212

Cohen, J. (1988) *Statistical power analysis for the behavioral sciences*. Routledge.

Compton, S. N., Peris, T. S., Almirall, D., Birmaher, B., Sherrill, J., Kendall, P. C., March, J. S., Gosch, E. A., Ginsburg, G. S., Rynn, M. A., Piacentini, J. C., McCracken, J. T., Keeton, C. P., Suveg, C. M., Aschenbrand, S. G., Sakolsky, D., Iyengar, S., Walkup, J. T., & Albano, A. M. (2014). Predictors and moderators of treatment response in childhood anxiety disorders: Results from the CAMS trial. *Journal of Consulting and Clinical Psychology, 82*, 212-224. doi: 10.1037/a0035458

Conners, C. K. (2008). *Conners-3rd ed*. Toronto, ON: Multi-Health Systems Inc.

Conners, C. K. (2015). *Conners Continuous Performance Test 3rd ed (Conners CPT), Conners Continuous Auditory Test of Attention (Conners CATA) Manual*. Canada: Multi-Health Systems Inc.

Constantino, J. N., & Gruber, C. P. (2005). *Social Responsiveness Scale (SRS) Manual*. Los Angeles, CA: Western Psychological Services.

Copeland, W. E., Shanahan, L., Costello, E. J., & Angold, A. (2009). Which childhood and adolescent psychiatric disorders predict which young adult disorders? *Archives of General Psychiatry, 66*, 764–772. doi: 10.1001/archgenpsychiatry.2009.85

Corthorn, C. (2018). Benefits of mindfulness for parenting for mothers of preschoolers in Chile. *Frontiers in Psychology, 9,* 1-11. doi: 10.3389/fpsyg.2018.01443

Corthorn, C., & Milicic, N. (2016). Mindfulness and parenting: A correlational study of non-meditating mothers of preschool children. *Journal of Child and Family Studies*, *25*, 1672-1683. doi: 10.1007/s10826-015-0319-z

Costa, A. P., Steffgen, G., & Ferring, D. (2017). Contributors to well-being and stress in parents of children with autism spectrum disorder. *Research in Autism Spectrum Disorders, 37*, 61-72. doi: 10.1016/j.rasd.2017.01.007

Costa, N. M., Weems, C. F., Pellerin, K., & Dalton, R. (2006). Parenting stress and childhood psychopathology: An examination of specificity to internalizing and externalizing symptoms. *Journal of Psychopathology and Behavioral Assessment, 28*, 113-122. doi: 10.1007/s10862-006-7489-3

Crandall, A., Deater-Deckard, K., & Riley, A. W. (2015). Maternal emotion and cognitive control capacities and parenting: A conceptual framework. *Developmental Review*, *36*, 105-126.

Crawford, J. R., & Henry, J. D. (2003). The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. *British Journal of Clinical Psychology*, *42*, 111-131.

Creswell, C., Schniering, C. A., & Rapee, R. M. (2005). Threat interpretation in anxious children and their mothers: Comparison with nonclinical children and the effects of treatment. *Behavior Research and Therapy*, *43*, 1375-1381.

Crouch, J. L., Irwin, L. M., Milner, J. S., Skowronski, J. J., Rutledge, E., & Davila, A. L. (2017). Do hostile attributions and negative affect explain the association between authoritarian beliefs and harsh parenting? *Child Abuse & Neglect, 67*, 13-21. doi: 10.1016/j.chiabu.2017.02.019

Curtiss, J., Klemanski, D. H., Andrews, L., Ito, M., & Hofmann, S. G. (2017). The conditional process model of mindfulness and emotion regulation: An empirical test. *Journal of Affective Disorders*, *212*, 93–100. doi: 10.1016/j.jad.2017.01.027

Daley, D., & Birchwood, J. (2010). ADHD and academic performance: Why does ADHD impact on academic performance and what can be done to support ADHD children in the classroom? *Child: Care, Health and Development, 36*, 455-464. doi: 0.1111/j.1365-2214.2009.01046.x

Davis, N. O., & Carter, A. S. (2008). Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: associations with child characteristics. *Journal of Autism & Developmental Disorders, 38*, 1278-1291. doi: 10.1007/s10803-007-0512-z

de Bruin, E. I., Blom, R., Smit, F. M. A., van Steensel, F. J. A., & Bögels, S. M. (2015). MYmind: Mindfulness training for youngsters with autism spectrum disorders and their parents. *Autism, 19*, 906-914. doi: 10.1177/1362361314553279

de Bruin, E. I., Sieh, D. S., Zijlstra, B. J., & Meijer, A. M. (2017). Chronic childhood stress: psychometric properties of the chronic stress questionnaire for children and

adolescents (CSQ-CA) in three independent samples. *Child Indicators Research. 2017:9478*. doi: 10.1007/s12187-017-9478-3.

de Bruin, E. I., Zijlstra, B. J., & Bögels, S. M. (2013). The meaning of mindfulness in children and adolescents: further validation of the Child and Adolescent Mindfulness Measure (CAMM) in two independent samples from the Netherlands. *Mindfulness, 196*. doi: 10.1007/s12671-013-0196-8.

de Bruin, E. I., Zijlstra, B. J. H., Geurtzen, N., van Zundert, R. M. P., van de Weijer-Bergsma, E., Hartman, E. E., Nieuwesteeg, A. M., Duncan, L. G., & Bögels, S. M. (2014). Mindful parenting assessed further: Psychometric properties of the Dutch version of the Interpersonal Mindfulness in Parenting scale (IMP). *Mindfulness, 5*, 200-212.

de Cock, E. S. A., Henrichs, J., Klimstra, T. A., Janneke, B. M. M. A., Vreeswijk, C., Meeus, W. H. J., & van Bakel, H. J. A. (2017). Longitudinal associations between parental bonding, parenting stress, and executive functioning in toddlerhood. *Journal of Child and Family Studies, 26*, 1723-1733. doi: 10.1007/s10826-017-0679-7

De Sonneville, L.M. J. (1999). "Amsterdam neuropsychological tasks: a computer aided assessment program," in B. P. L. M. den Brinker, P. J. Beek, A. N. Brand, S. J. Maarse, & L. J. M. Mulder (Eds.), *Cognitive Ergonomics, Clinical Assessment and Computer-assisted Learning: Computers in Psychology,* Vol. 6, 187–203, Lisse: Swets and Zeitlinger.

Deater-Deckard, K. (2004). *Parenting stress*. New Haven, CT: Yale University Press.

Deater-Deckard, K., Li, M., & Bell, M. A. (2016). Multifaceted emotion regulation, stress and affect in mothers of young children. *Cognition and Emotion, 30*, 444-457. doi: 10.1080/02699931.2015.1013087

Deater-Deckard, K., Smith, J., Ivy, L., & Petril, S. A. (2005). Differential perceptions of and feelings about sibling children: implications for research on parenting stress. *Infant and Child Development, 14*, 211-225. doi: 10.1002/icd.389

Diedrich, A., Burger, J., Kirchner, M., & Berking, M. (2017). Adaptive emotion regulation mediates the relationship between self-compassion and depression in individuals with unipolar depression. *Psychology and Psychotherapy: Theory, Research and Practice, 90*, 247-263. doi: 10.1111/papt.12107

Dieleman, L. M., Soenens, B., Prinzie, P., De Clercq, L., Ortibus, E., & De Pauw, S. S. W. (2020). Daily parenting of children with cerebral palsy: The role of daily child behavior, parents' daily psychological needs, and mindful parenting. *Development and Psychopathology*, 1–17. doi:10.1017/S0954579419001688

Drake, K. L., & Ginsburg, G. S. (2012). Family factors in the development, treatment, and prevention of childhood anxiety disorders. *Clinical Child and Family Psychology Review, 15*, 144-162. doi: 10.1007/s10567-011-0109-0

Dretzke, J., Davenport, C., Frew, E., Barlow, J., Stewart-Brown, S., Bayliss, S., & Hyde, C. (2009). The clinical effectiveness of different parenting programmes for children with conduct problems: a systematic review of randomised controlled trials. *Child and Adolescent Psychiatry & Mental Health, 3*. doi: 10.1186/1753-2000-3-7

Dumas, J. E. (2005). Mindfulness-based parent training: Strategies to lessen the grip of automaticity in families with disruptive children. *Journal of Clinical Child and Adolescent Psychology, 34*, 779-791. doi:10.1207/s15374424jccp3404_20

Duncan, L. G. (2007). *Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting scale* (Publication number: 3380731) [Doctoral dissertation, The Pennsylvania State University]. ProQuest LLC.

Duncan, L. G., Coatsworth, J., Gayles, J. G., Geier, M. H., & Greenberg, M. T. (2015). Can mindful parenting be observed? Relations between observational ratings of mother-youth interactions and mothers' self-report of mindful parenting. *Journal of Family Psychology, 29*, 276-282. doi:10.1037/a0038857

Duncan, L. G., Coatsworth, J., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review, 12*, 255-270. doi:10.1007/s10567-009-0046-3

Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics, 56*, 455–463. doi: 10.1111/j.0006-341X.2000.00455.x

Eames, C., Crane, R., Gold, E., & Pratt, S. (2015). Mindfulness-based wellbeing for socio-economically disadvantaged parents: a pre-post pilot study. *Journal of Children's Services, 10*, 17-28. doi: 10.1108/JCS-09-2014-0040

Eckshtain, D., Marchette, L. K., Schleider, J., & Weisz, J. R. (2018). Parental depressive symptoms as a predictor of outcome in the treatment of child depression. *Journal of Abnormal Child Psychology, 46*, 825-837. doi: 10.1007/s10802-017-0323-4

Edwards, S. L., Rapee, R. M., & Kennedy, S. (2010). Prediction of anxiety symptoms in preschool-aged children: Examination of maternal and paternal perspectives. *Journal of Child Psychology & Psychiatry,* 51, 313-321. doi: 10.1111/j.1469-7610.2009.02160.x

Eisenberg, N., Fabes, R. A., Shepard, S. A., Guthrie, I. K., Murphy, B. C., & Reiser, M. (1999). Parental reactions to children's negative emotions: longitudinal relations to quality of children's social functioning. *Child Development, 70*, 513–534. doi: 10.1111/1467-8624.00037

Eldridge, S. M., Chan, C. L., Campbell, M. J., Bond, C. M., Hopewell, S., Thabane, L., Lancaster, G. A., on behalf of the PAFS consensus group. (2016). CONSORT 2010 statement: Extension to randomized pilot and feasibility trials. *British Medical Journal, 355*. doi: 10.1136/bmj.i5239

Emerson, L. M., Aktar, E., de Bruin, E., Potharst, E., & Bögels, S. (2019a). Mindful parenting in secondary child mental health: Key parenting predictors of treatment effects. *Mindfulness*. doi: 10/1007/s12671-019-01176-w

Emerson, L. M., Biesters, J., de Bruin, E., & Bögels, S. (2021). The distinguishing characteristics of parents seeking a mindful parenting intervention in child mental health care. *Journal of Child and Family Studies, 30*. doi: 10.1007/s10826-020-01890-3

Emerson, L. M., Ogielda, C., & Rowse, G. (2019b). The role of experiential avoidance and parental control in the association between parent and child anxiety. *Frontiers in Psychology, 10*:262. doi: 10.3389/fpsyg.2019.00262

Fernandes, D. V., Canavarro, M. C., & Moreira, H. (2020). The mediating role of parenting stress in the relationship between anxious and depressive symptomatology, mothers' perception of infant temperament, and mindful parenting during the postpartum period. *Mindfulness*. doi: 10.1007/s12671-020-01327-4

Ferraioli, S. J., & Harris, S. L. (2013). Comparative effects of mindfulness and skills-based parent training programs for parents of children with autism: Feasibility and preliminary outcome data. *Mindfulness, 4*, 89-101. doi: 10.1007/s12671-012-0099-0

Flacking, R., Thomson, G., & Axelin, A. (2016). Pathways to emotional closeness in neonatal units – a cross-national qualitative study. *BMC Pregnancy and Childbirth, 16*, doi: 10.1186/s12884-016-0955-3

Flory, V. (2004). A novel clinical intervention for severe childhood depression and anxiety. *Clinical Child Psychology and Psychiatry, 9*, 9-23. doi:10.1177/1359104504039167

Francis, S. E., & Chorpita, B. F. (2010). Development and evaluation of the Parental Beliefs about Anxiety Questionnaire. *Journal of Psychopathology and Behavioral Assessment*, 32, 138–149. doi: 10.1007/s10862-009-9133-5

Fresco, D. M., Moore, M., van Dulmen, M., Segal, Z., Ma, S., Teasdale, J., & Williams, J. M. G. (2007). Initial psychometric properties of the Experiences Questionnaire: Validation of a self-report measure of decentring. *Behavior Therapy, 38*, 234–246. doi: 10.1016/j.beth.2006.08.003

Friedrich, W. N., Greenberg, M. T., & Crnic, K. (1983). A short-form of the Questionnaire on Resources and Stress. *American Journal of Mental Deficiency, 88*, 41–48.

Fu, R., Gartlehner, G., Grant, M., Shamliyan, T., Sedrakyan, A., Wilt, T. J., Griffith, L., Oremus, M., Raina, P., Ismaila, A., Santaguida, P., Lau, J., & Trikalinos, T. A. (2011). Conducting quantitative synthesis when comparing medical interventions: AHRQ and the Effective Health Care Program. *Journal of Clinical Epidemiology, 64*, 1187-1197. doi: 10.1016/jclinepi.2010.08.010

Fulton, J. J., Kiel, E. J., Tull, M. T., & Gratz, K. L. (2014). Associations between perceived parental overprotection, experiential avoidance, and anxiety. *Journal of Experimental Psychopathology*, *5*(2), 200-211. doi: 10.5127%2Fjep.034813

Garnefski, N., & Kraaij, V. (2006). Cognitive emotion regulation questionnaire - development of a short 18-item version (CERQ-short). *Personality and Individual Differences, 41*, 1045–1053. doi: 10.1016/j.paid.2006.04.010

Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual differences*, *30*(8), 1311-1327. doi: 10.1016/S0191-8869(00)00113-6

Geurtzen, N., Scholte, R. H. J., Engels, R. C. M. E., Tak, Y. R., & van Zundert, R. M. P. (2015). Association between mindful parenting and adolescents' internalizing problems: Non-judgmental acceptance of parenting as core element. *Journal of Child and Family Studies, 24*, 1117-1128.

Goia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (2000). *Behavior Rating Inventory of Executive Function (BRIEF): Professional Manual*. Lutz: Psychological Assessment Resources.

Goodman, R. (1997). The strengths and difficulties questionnaire: a research note. *Journal of Child Psychology & Psychiatry, 38*, 581–586. doi: 10.1111/j.1469-7610.1997.tb01545.x

Goodman, A., Ploubidis, D. L., & Lamping, G. B. (2010). When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the Strengths and Difficulties Questionnaire (SDQ): Data from British parents, teachers and children. *Journal of Abnormal Child Psychology*, 38, 1179-1191.

Gradisar, M., Lack, L., Richards, H., Harris, J., Gallasch, J., Boundy, M., & Johnstone, A. (2007). The Flinders Fatigue Scale: preliminary psychometric properties and clinical sensitivity of a new scale for measuring daytime fatigue associated with insomnia. *Journal of Clinical Sleep Medicine, 3*, 722–728.

Gresham, F. M., & Elliott, S. N. (2008). *Social Skills Improvement System Rating Scales*. Minneapolis: NCS Pearson.

Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical Psychology Review*, *37*, 1-12. doi: 10.1016/j.cpr.2015.01.006

Gunzenhauser, C., Fäsche, A., Friedlmeier, W., & von Suchodoletz, A. (2014). Face it or hide it: Parental socialization of reappraisal and response suppression. *Frontiers in Psychology, 4*. doi: 10.3389/fpsyg.2013.00992

Harnett, P. H., & Dawe, S. (2012). The contribution of mindfulness-based therapies for children and families and proposed conceptual integration. *Child and Adolescent Mental Health, 17*, 195–208. doi: 10.1111/j.1475-3588.2011.00643.x

Havighurst, S. S., Wilson, K. R., Harley, A. E., Prior, M. R., & Kehoe, C. (2010). Tuning in to Kids: Improving emotion socialization practices in parents of preschool children – findings from a community trial. *Journal of Child Psychology and Psychiatry, 51,* 1342–1350. doi: 10.1111/j.1469-7610.2010.02303.x

Haydicky, J., Shecter, C., Wiener, J., & Ducharme, J. M. (2015). Evaluation of MBCT for adolescents with ADHD and their parents: Impact on individual and family functioning. *Journal of Child and Family Studies, 24*, 76-94. doi: 10.1007/s10826-013-9815-1

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But…, *Communication Methods and Measures*, *14*, 1-24, doi: 10.1080/19312458.2020.1718629

Hedges, L. V., & Olkin, I. (1985). *Statistical Methods for Meta-Analysis*. San Diego, CA: Academic Press.

Herren, C., In-Albon, T., & Schneider, S. (2013). Beliefs regarding child anxiety and parenting competence in parents of children with separation anxiety disorder. *Journal of Behavior Therapy and Experimental Psychiatry, 44*, 53-60. doi: 10.1016/j.jbtep.2012.07.005

Higgins, J. P., Altman, D. G., Gøtzsche, P. C., Jüni, P., Moher, D., Oxman, A.D., Savović, J., Schulz, K. F., Weeks, L., & Sterne, J. A. C. (2011). The Cochrane Collaboration's

tool for assessing risk of bias in randomised trials. *British Medical Journal, 343*, 1–9. doi: 10.1136/bmj.d5928

Higgins, J. P., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *British Medical Journal, 6,* 357–360. doi: 10.1136/bmj.327.7414.557

Hoffman, C., Crnic, K. A., & Baker, J. K. (2006). Maternal depression and parenting: Implications for children's emergent emotion regulation and behavioral functioning. *Parenting: Science and Practice, 6*, 271-295. doi: 10.1207/s15327922par0604_1

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of cognitive behavioral therapy: a review of meta-analyses. *Cognitive Therapy & Research, 36*, 427–440. doi: 10.1007/s10608-012-9476-1

Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 78*(2), 169–183. doi: 10.1037/a0018555

Hurrell K. E., Houwing F. L., & Hudson J. L. (2017). Parental meta-emotion philosophy and emotion coaching in families of children and adolescents with an anxiety disorder. *Journal of Abnormal Child Psychology, 45*, 569-582. doi: 10.1007/s10802-016-0180-6

Huth-Bocks, A. C., & Hughes, H. M. (2007). Parenting stress, parenting behavior, and children's adjustment in families experiencing intimate partner violence. *Journal of Family Violence, 23*, 243-251. doi: 10.1007/s10896-007-9148-1

Inwood, E. & Ferrari, M. (2018). Mechanisms of change in the relationship between self-compassion, emotion regulation and mental health: A systematic review. *Applied Psychology: Health and Well-being, 10*, 215-235. doi:10.1111/aphw.12127

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12–19. doi: 10.1037/0022-006X.59.1.12

James, A.C., James, G., Cowdrey, F.A., Soler, A., & Choke, A. (2013). Cognitive behavioral therapy for anxiety disorders in children and adolescents. *Cochrane Database Systematic Reviews, 3, CD004690*. doi: 10.1002/14651858.CD004690.pub3

Jaworska, N., & MacQueen, G. (2015). Adolescence as a unique developmental period. *Journal of Psychiatry & Neuroscience*, *40*, 291–293. doi: 10.1503/jpn.150268

Johnco, C., Storch, E., Oar, E., McBride, N. M., Schneider, S., & Silverman, W. K. (2021). The role of parental beliefs about anxiety and attachment on parental accommodation of child anxiety. *Research on Child and Adolescent Psychopathology.* doi: 10.1007/s10802-020-00722-8

Jones, L., Gold, E., Totsika, V., Hastings, R. P., Jones, M., Griffiths, A., & Silverton, S. (2018). A mindfulness parent wellbeing course: Evaluation of outcomes for parents of children with autism and related disabilities recruited through special schools. *European Journal of Special Needs Education, 33*, 16-30. doi: 10.1080/08856257.2017.1297571

Jones, L., Hastings, R.P., Totsika, V., Keane, L., & Rhule, N. (2014). Child behavior problems and parental well-being in families of children with autism: The mediating role of mindfulness and acceptance. *American Journal on Intellectual and Developmental Disabilities, 119*, 171-85. doi: 10.1352/1944-7558-119.2.171.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10*, 144-156. doi: 10.1093/clipsy/bpg016

Kabat-Zinn, J. (2015). Mindfulness. *Mindfulness, 6*, 1481-1483. doi:10.1007/s12671-015-0456-x

Kabat-Zinn, J., & Kabat-Zinn, M. (1997). *Everyday blessings. The inner work of mindful parenting*. New York: First Trade.

Kabat-Zinn, J. & Kabat-Zinn, M. (2021). Mindful parenting: Perspectives on the heart of the matter. *Mindfulness, 12*, 266–268. doi: 10.1007/s12671-020-01564-7

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., & Pbert, L., Lenderking, W. R., & Santorelli, S. F. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *The American Journal of Psychiatry, 149,* 936. doi: 10.1176/ajp.149.7.936

Karavasilis, L., Doyle, A. B., & Markiewicz, D. (2003). Associations between parenting style and attachment to mother in middle childhood and adolescence. *International Journal of Behavioral Development, 27*(2), 153–164. doi:10.1080/0165025024400015

Kendall, P. (1979). Self-control rating scale. *Journal of Consulting and Clinical Psychology, 40*, 1020–1029.

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., Chapleau, M.A., Paquin, K., & Hofmann, S.G. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review, 33*, 763-771. doi: 10.1016/j.cpr.2013.05.005

Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research, 78*, 519-528. doi: 10.1016/j.jpsychores.2015.03.009

Kiel, E. J., Wagers, K. B., & Luebbe, A. M. (2019) The Attitudes About Parenting Strategies for Anxiety Scale: A measure of parenting attitudes about protective and intrusive behavior. *Assessment, 26*, 1504-1523. doi: 10.1177%2F1073191117719513

Kiken, L. G., Garland, E. L., Bluth, K., Palsson, O. S., & Gaylord, S. A. (2015). From a state to a trait: Trajectories of state mindfulness in meditation during intervention predict

changes in trait mindfulness. *Personality and Individual Differences*, *81*, 41–46. doi: 10.1016/j.paid.2014.12.044

Kil, H., & Antonacci, R. (2020). Mindful parenting programs in non-clinical contexts: A qualitative review of child outcomes and programs, and recommendations for future research. *Journal of Child and Family Studies*, *29*(7), 1887-1898. doi: 10.1007/s10826-020-01714-4

Kim, K. J., Conger, R. D., Lorenz, F. O., & Elder, G. H. (2001). Parent-adolescent reciprocity in negative affect and its relation to early adult social development. *Developmental Psychology, 37*, 775-790. doi: 10.1037/0012-1649.37.6.775

Kim, E., Krägeloh, C. U., Medvedev, O. N., Duncan, L. G., & Singh, N. N. (2018). Interpersonal mindfulness in parenting scale: Testing the psychometric properties of a Korean version. *Mindfulness*. doi: 10.1007/s12671-018-0993-1

Kirby, J. N., Tellegen, C. L., & Steindl, S. R. (2017). A meta-analysis of compassion-based interventions: Current state of knowledge and future directions. *Behavior Therapy, 48*, 778-792. doi: 10.1016/j.beth.2017.06.003

Lathren, C., Bluth, K., & Zvara, B. (2020). Parent self-compassion and supportive responses to Child difficult emotion: An intergenerational theoretical model rooted in attachment. *Journal of Family Theory & Review*, *12*, 368–381. doi.org/10.1111/jftr.12388

Laursen, B., Coy, K. C., & Collins, W. A. (1998). Reconsidering changes in parent-child conflict across adolescence: A meta-analysis. *Child Development, 69*, 817-832. doi: 10.1111/j.1467-8624.1998.tb06245.x

Lavee, Y., Sharlin, S., & Katz, R. (1996). The effect of parenting stress on marital quality: An integrated mother-father model. *Journal of Family Issues, 17*, 114-135. doi: 10.1177/019251396017001007

Lebowitz, E., Marin, C., Martino, A., Shimsoni, Y., & Silverman, W. K. (2020). Parent-based treatment as efficacious as cognitive-behavioral therapy for childhood anxiety: A randomized non-inferiority study of supportive parenting for anxious childhood emotions. *Journal of the American Academy of Child & Adolescent Psychiatry, 59*, 362-372. doi: 10.1016/j.jaac.2019.02.014

Lee, P., Niew, W., Yang, H., Chen, V. C., & Lin, K. (2012). A meta-analysis of behavioral parent training for children with attention deficit hyperactivity disorder. *Research on Developmental Disabilities, 33*, 2040–2049. doi: 10.1016/j.ridd.2012.05.011

Lewallen, A. C., & Neece, C. L. (2015). Improved social skills in children with developmental delays after parent participation in MBSR: The role of parent-child relational factors. *Journal of Child and Family Studies, 24*, 3117-3129. doi: 10.1007/s10826-015-0116-8

Linehan, M. M. (1993). *Skills Training Manual for Treating Borderline Personality Disorder*. New York, NY: Guilford Press.

Lo, H. H. M., Chan, S. K. C., Szeto, M. P., Chan, C. Y. H., & Choi, C. W. (2017a). A feasibility study of a brief mindfulness-based program for parents of preschool children with developmental disabilities. *Mindfulness, 8*, 1665-1673. doi: 10.1007/s12671-017-0741-y

Lo, H. H. M., Wong, S. W. L., Wong, J. Y. H., Yeung, J. W. K., Snel, E., & Wong, S. Y. S. (2017b). The effects of family-based mindfulness intervention on ADHD symptomology in young children and their parents: A randomised control trial. *Journal of Attention Disorders*. doi: 10.1177/1087054717743330

Lo, H.H.M., Yeung, J.W.K., Duncan, L.G., Ma, Y., Siu, A. F. Y., Chan, S. K. C., Choi, C. W., Szeto, M. P., Chow, K. K. W., & Ng, S. M. (2018). Validating of the

Interpersonal Mindfulness in Parenting Scale in Hong King Chinese. *Mindfulness*. doi: 10.1007/s12671-017-0879-7

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behavior Research and Therapy, 33*(3), 335–343. doi: 10.1016/0005-7967(94)00075-U

Lundahl, B., Nimer, J., & Parsons, B. (2006a). Preventing child abuse: a meta-analysis of parent training programs. *Research on Social Work Practice, 16*, 251–262. doi: 10.1177/1049731505284391

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006b). A meta-analysis of parent training: moderators and follow-up effects. *Clinical Psychology Review, 26*, 86–104. doi: 10.1016/j.cpr.2005.07.004

Luteijn, E., Luteijn, F., Jackson, S., Volkmar, F., & Mideraa, R. B. (2000). The children's social behavior questionnaire for milder variants of PDD problems: evaluation of the psychometric characteristics. *Journal of Autism & Developmental Disorders, 30*, 317–330. doi: 10.1023/A:1005527300247

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness. *Social Indicators Research, 46*:137. doi: 10.1023/A:1006824100041

MacPherson, H. A., & Fristad, M. A. (2014). Evidence-based psychosocial treatments for pediatric mood and anxiety disorders. *Current Treatment Options in Psychiatry*, *1*(1), 48-65. doi: 10.1007/s40501-013-0002-1

Majdandžić, M., de Vente, W., Colonnesi, C., & Bögels, S. M. (2018). Fathers' challenging parenting behavior predicts less subsequent anxiety symptoms in early childhood. *Behaviour Research and Therapy, 109*, 18-28. doi: 10.1016/j.brat.2018.07.007

Majdandžić, M., Möller, E. L., de Vente, W., Bögels, S. M., & van den Boom, D. C. (2014). Fathers' challenging parenting behavior prevents social anxiety development in their 4-year-old children: A longitudinal observational study. *Journal of Abnormal Child Psychology, 42*, 301-310. doi: 10.1007/s10802-013-9774-4

Malecki, C. K., & Elliott, S. N. (2002). Children's social behaviors as predictors of academic achievement: A longitudinal analysis. *School Psychology Quarterly, 17*, 1-23. doi: 10.1521/scpq.17.1.1.19902

Maliken, A. C., & Katz, L. F. (2013). Exploring the impact of parental psychopathology and emotion regulation on evidence-based parenting interventions: A transdiagnostic approach to improving treatment effectiveness. *Clinical Child and Family Psychological Review, 16*, 173-186. doi: 10.1007/s10567-013-0132-4

Maloney, R., & Altmaier, E. (2007). An initial evaluation of a mindful parenting program. *Journal of Clinical Psychology, 63*, 1231-1238. doi: 10.1002/jclp.20395

Manly, T., Anderson, V., Nimmo-Smith, I., Turner, A., Watson, P., & Robertson, I. H. (2001). The differential assessment of children's attention: the Test of Everyday Attention for Children (TEA-Ch), normative sample and ADHD performance. *Journal of Child Psychology and Psychiatry, 42*, 1065–1081. doi: 10.1017/S0021963001007909

Mann, J., Kuyken, W., O'Mahen, H., Ukoumunne, O. C., Evans, A., & Ford, T. (2016). Manual development and pilot randomised controlled trial of mindfulness-based cognitive therapy versus usual care for parents with a history of depression. *Mindfulness, 7*, 1024-1033. doi: 10.1007/s12671-016-0543-7

Marsh, I. C., Chan, S. W. Y., & MacBeth, A. (2018). Self-compassion and psychological distress in adolescents - a meta-analysis. *Mindfulness, 9,* 1011-1027. doi: 10.1007/s12671-017-0850-7

McCaffrey, S., Reitman, D., & Black, R. (2017). Mindfulness In Parenting Questionnaire (MIPQ): Development and validation of a measure of mindful parenting. *Mindfulness, 8,* 232-246. doi: 10.1007/s12671-016-0596-7

McDonald, R. P. (1999). *Test theory: A unified treatment*. Mahwah, NJ: Lawrence Erlbaum.

McGregor, H. A., Sanner, C. M., & Neece, C. L. (2020). Effects of MBSR parent intervention on internalizing problems in children: ASD status as a moderator. *Journal of Mental Health Research in Intellectual Disabilities, 13*, 343-363, doi: 10.1080/19315864.2020.1815913

McKee, L. G., Parent, J., Zachary, C. R., & Forehand, R. (2018). Mindful parenting and emotion socialization practices: Concurrent and longitudinal associations. *Family Process, 57,* 752-766. doi: 10.1111/famp.12329

McLeod, B. D., Weisz, J. R., & Wood, J. J. (2007). Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review, 27*, 986-1003. doi: 10.1016/j.cpr.2007.03.001

McMahon, C. A., & Meins, E. (2012). Mind-mindedness, parenting stress, and emotional availability in mothers of preschoolers. *Early Childhood Research Quarterly, 27*, 245-252. doi:10.1016/j.ecresq.2011.08.002

Medeiros, C., Gouveia, M. J., Canavarro, M. C., & Moreira, H. (2016). The indirect effect of the mindful parenting of mothers and fathers on the child's perceived well-being through the child's attachment to parents. *Mindfulness, 7*, 916-927.

Meijer, A. (2008). Chronic sleep reduction, functioning at school and school achievement in preadolescents. *Journal of Sleep Research, 17*, 395–405. doi: 10.1111/j.1365-2869.2008.00677.x

Meppelink, R., de Bruin, E. I., Wanders-Mulder, F. H., Vennik, C. J., & Bögels, S. M. (2016). Mindful parenting training in child psychiatric settings: Heightened parental

mindfulness reduces parents' and children's psychopathology. *Mindfulness, 7*, 680-689. doi: 10.1007/s12671-016-0504-1

Meyer, J. M., Clapp, J. D., Whiteside, S. P., Dammann, J., Kriegshauser, K. D., Hale, L. R., Jacobi, D. M., Riemann, B. C., & Deacon, B. J. (2018). Predictive relationship between parental beliefs and accommodation of pediatric anxiety. *Behavior Therapy*, 49, 580-593.

Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behavior Research and Therapy, 28*, 487–495. doi: 10.1016/0005-7967(90)90135-6

Mingebach, T., Kamp-Becker, I., Christiansen, H., & Weber, L. (2018). Meta-meta-analysis on the effectiveness of parent-based interventions for the treatment of child externalizing behavior problems. *PloS One*, *13*(9), e0202855. doi: 10.1371/journal.pone.0202855

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med. 6:97*. doi: 10.1371/journal.pmed1000097

Möller, E. L., Majdandžić, M., & Bögels, S. M. (2015). Parental anxiety, parenting behavior, and infant anxiety: Differential associations for fathers and mothers. *Journal of Child and Family Studies*, 24, 2626–2637. doi: 10.1007/s10826-014-0065-7

Moreira, H., & Canavarro, M. C. (2015). Individual and gender differences in mindful parenting: The role of attachment and caregiving representations. *Personality and Individual Differences, 87,* 13-19.

Moreira, H., & Canavarro, M. C. (2017). Psychometric properties of the Interpersonal Mindfulness in Parenting Scale in a sample of Portugese mothers. *Mindfulness, 8*, 691-706. doi:10.1007/s12671-016-0647-0

Moreira, H., & Canavarro, M. C. (2018). The association between self-critical rumination and parenting stress: The mediating role of mindful parenting. *Journal of Child and Family Studies, 27*, 2265–2275. doi: 10.1007/s10826-018-1072-x

Moreira, H., & Canavarro, M. C. (2020). Mindful parenting is associated with adolescents' difficulties in emotion regulation through adolescents' psychological inflexibility and self-compassion. *Journal of Youth and Adolescence,* 49, 192–211. doi: 10.1007/s10964-019-01133-9

Moreira, H., Caiado, B., & Canavarro, M. C. (2020). Is mindful parenting a mechanism that links parents' and children's tendency to experience negative affect to overprotective and supportive behaviors? *Journal of Youth and Adolescence,* 49, 192–211. doi: 10.1007/s10964-019-01133-9

Moretti, M. M., & Peled, M. (2004). Adolescent-parent attachment: Bonds that support healthy development. *Paediatric and Child Health, 9*, 551-555. doi: 10.1093/pch/9.8.551

Morris, A. S., Criss, M. M., Silk, J. S., & Houltberg, B. J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Development Perspectives, 11*, 233-238. doi: 10.1111/cdep.12238

Morris, S. B. (2008). Estimating effect sizes from pretest-posttest-control group designs. *Organizational Research Methods, 11*, 364-386. doi: 10.1177/1094428106291059

Murray, J., & Cartwright-Hatton, S. (2006). NICE guidelines on treatment of depression in childhood and adolescence: Implications from a CBT perspective. *Behavioral and Cognitive Psychotherapy, 34*(2), 129–137. doi: 10.1017/S1352465805002742

Neece, C. L. (2014). Mindfulness-based stress reduction for parents of young children with developmental delays: Implications for parental mental health and child behavior

problems. *Journal of Applied Research in Intellectual Disabilities, 27*, 174-186. doi: 10.1111/jar.12064

Neece, C. L., Chan, N., Klein, K., Roberts, L., & Fenning, R. M. (2018). Mindfulness-Based Stress Reduction for parents of children with developmental delays: Understanding the experiences of Latino families. *Mindfulness*. doi: 10.1007/s12671-018-1011-3

Neece, C. L., Green, S. A., & Baker, B. L. (2012). Parenting stress and child behavior problems: A transactional relationship across time. *American Journal on Intellectual and Developmental Disabilities, 117*, 48-66. doi: 10.1352/1944-7558-117.1.48

Neff, K. (2015). The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness, 7*, 264-274. doi: 10.1007/s12671-015-0479-3

Nelson, J. A., O'Brien, M., Calkins, S. D., & Keane, S. P. (2013). Mothers' and fathers' negative responsibility attributions and perceptions of children's problem behavior. *Personal Relationships, 20*, 719–727. doi: 10.1111/pere.12010

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology, 109*, 504-511. doi: 10.1037/0021-843X.109.3.504

Östberg, M., & Hagekull, B. (2000). A structural modeling approach to the understanding of parenting stress. *Journal of Clinical Child Psychology, 29*, 615-625. doi: 10.1207/s15374424jccp2904_13

Östberg, M., Hagekull, B., & Hagelin, E. (2007). Stability and prediction of parenting stress. *Infant and Child Development, 16*(2), 207-223. doi:10.1002/icd.516

Pan, J., Liang, Y., Zhou, H., & Wang, Y. (2019). Mindful parenting assessed in mainland China: Psychometric properties of the Chinese version of the Interpersonal Mindfulness in Parenting Scale. *Mindfulness, 10*, 1629-1641. doi: 10.1007/s12671-019-01122-w

Paquette, D. (2004). Theorizing the father-child relationship: Mechanisms and developmental outcomes. *Human Development, 47*, 193–219. doi: 10.1159/000078723

Parent, J., McKee, L. G., Rough, J. N., & Forehand, R. (2016). The association of parent mindfulness with parenting and youth psychopathology across three developmental stages. *Journal of Abnormal Child Psychology, 44*, 191-202. doi: 10.1007/s10802-015-9978-x

Parsons, C. E., Crane, C., Parsons, L. J., Fjorback, L. O., & Kuyken, W. (2017). Home practice in mindfulness-based cognitive therapy and mindfulness-based stress reduction: A systematic review and meta-analysis of participants' mindfulness practice and its association with outcomes. *Behavior Research and Therapy, 95*, 29-41. doi: 10.1016/j.brat.2017.05.004

Pelham, W. E., Gnagy, E. M., Greenslade, K. E., & Milich, R. (1992). Teacher ratings of DSM-III-R symptoms for the disruptive behavior disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 210-218. doi: 10.1097/00004583-199203000-00006

Pinquart, M. (2017). Associations of parenting dimensions and styles with internalizing symptoms in children and adolescents: A meta-analysis. *Marriage and Family Review, 53*, 613-640. doi: 10.1080/01494929.2016.1247761

Placone-Willey, P. M. (2002). *A curriculum for mindful parenting: A model development dissertation* (UMI No. 3040781) [Doctoral dissertation], *Dissertations Abstracts International*.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, *63*, 539-569. doi: 10.1146/annurev-psych-120710-100452

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual research review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology & Psychiatry, 56*, 345-365. doi:10.1111/jcpp.12381

Posner, M. I. & Petersen, S. E. (1990). The attention system of the human brain. *Annual Review of Neuroscience, 13*, 25-42.

Potharst, E. S., Aktar, E., Rexwinkel, M., Rigterink. M., & Bögels, S. M. (2017). Mindful with your baby: Feasibility, acceptability and effects of a mindful parenting group training for mothers and their babies in a mental health context. *Mindfulness, 8*, 1236-1250. doi: 10.1007/s12671-017-0699-9

Potharst, E. S., Baartmans, J. M. D., & Bögels, S. M. (2018a). Mindful parenting training in a clinical versus non-clinical setting: An explorative study. *Mindfulness*. doi: 10.1007/s12671-018-1021-1

Potharst, E. S., Boekhorst, M. G. B. M., Cuijlits, I., van Broekhoven, K. E. M., Jacobs, A., Spek, V., Nykliček, I., Bögels, S., & Pop, V. J. M. (2019). A randomized control trial evaluating an online mindful parenting training for mothers with elevated parental stress. *Frontiers in Psychology*. doi: 10.3389/fpsyg.2019.01550

Potharst, E. S., Leyland, A., Colonnesi, C., Veringa, I. K., Salvadori, E. A., Jakschik, M., Bögels, S. M., & Zeegers, M. A, J. (2020). Does mothers' self-reported mindful parenting relate to the observed quality of parenting behavior and mother-child interaction? *Mindfulness*, doi: 10.1007/s12671-020-01533-0

Potharst, E. S., Zeegers, M., & Bögels, S. M. (2018b). Mindful with your toddler group training: Feasibility, acceptability, and effects on subjective and objective measures. *Mindfulness*. doi: 10.1007/s12671-018-1073-2

Putnam, S. P., Helbig, A. L., Gartstein, M. A., Rothbart, M. K., & Leerkes, E. (2014). Development and assessment of short and very short forms of the Infant Behavior Questionnaire-revised. *Journal of Personality Assessment, 96*, 445-458. doi: 10.1080/00223891.2013.841171

Querstret, D., Morison, L., Dickinson, S., Cropley, M., & John, M. (2020). Mindfulness-based stress reduction and mindfulness-based cognitive therapy for psychological health and well-being in nonclinical samples: A systematic review and meta-analysis. *International Journal of Stress Management, 27*, 394-411. doi:10.1037/str0000165

Racey, D. N., Fox, J., Berry, V. L., Blockley, K. V., Longridge, R. A., Simmons, J. L., Janssens, A., Kuyken, W., & Ford, T. J. (2017). Mindfulness-based cognitive therapy for young people and their carers: A mixed-method feasibility study. *Mindfulness*. doi: 10.1007/s12671-017-0842-7

Raio, C. M., Orederu, T. A., Palazzolo, L., Shurick, A. A., & Phelps, E. A. (2013). Cognitive emotion regulation fails the stress test. *PNAS Proceedings of the National Academy of Sciences of the United States of America, 110*, 15139-15144. doi: 10.1073/pnas.1305706110

Rapee, R. M. (2012). Family factors in the development and management of anxiety disorders. *Clinical Child and Family Psychology Review, 15*, 69-80. doi: 10.1007/s10567-011-0106-3

Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems – a meta-analytic review. *The Journal of Child Psychology and Psychiatry, 47*, 99-111. doi: 10.1111/j.1469-7610.2005.01544.x

Ridderinkhof, A., de Bruin, E. I., Blom, R., & Bögels, S. M. (2017). Mindfulness-based program for children with autism spectrum disorder and their parents: Direct and long-term improvements. *Mindfulness*. doi: 10.1007/s12671-017-0815-x

Robinson, E. A., Eyberg, S. M., & Ross, A. W. (1980). The standardisation of an inventory of child conduct problems. *Journal of Clinical Child Psychology, 9*, 22-29.

Robinson, M., & Neece, C. L. (2015). Marital satisfaction, parental stress, and child behavior problems among parents of young children with developmental delays. *Journal of Mental Health Research in Intellectual Disabilities, 8*, 23-46. doi: 10.1080/19315864.2014.994247

Rodriguez, C. M. (2011). Association between independent reports of maternal parenting stress and children's internalizing symptomatology. *Journal of Child and Family Studies, 20*, 631-639. doi: 10.1007/s10826-010-9438-8

Rominov, H., Giallo, R., & Whelan, T. A. (2016). Fathers' postnatal distress, parenting self-efficacy, later parenting behavior, and children's emotional-behavioral functioning: A longitudinal study. *Journal of Family Psychology, 30*, 907-917. doi:10.1037/fam0000216

Rosenthal, R. (1993). *Meta-analytic procedures for social research*. Newbury Park, CA: Sage.

Rousseau, S. & Scharf, M. (2017). Why people helicopter parent? An actor–partner interdependence study of maternal and paternal prevention/promotion focus and interpersonal/self-regret. *Journal of Social and Personal Relationships, 35*, 919-935, doi: 10.1177/0265407517700514

Rutherford, H. J. V., Wallace, N. S., Laurent, H. K., & Mayes, L. C. (2015). Emotion regulation in parenthood. *Developmental Review, 36*, 1-14. doi: 10.1016/j.dr.2014.12.008

Sameroff, A., & Mackenzie, M. (2003). Research strategies for capturing transactional models of development: The limits of the possible. *Development and Psychopathology, 15*(3), 613-640. doi:10.1017/S0954579403000312

Sanders, M. R., & Mazzucchelli, T. G. (2013). The promotion of self-regulation through parenting interventions. *Clinical Child and Family Psychology Review*, *16*, 1-17. doi: 10.1007/s10567-013-0129-z

Segal, Z., Williams, J., & Teasdale, J. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guildford Press.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2013). *Mindfulness-based cognitive therapy for depression* (2nd ed.). The Guilford Press.

Settipani, C. A., & Kendall, P. A. (2017). The effect of child distress on accommodation of anxiety: Relations with maternal beliefs, empathy, and anxiety. *Journal of Clinical Child & Adolescent Psychology, 46*, 810-823, doi: 10.1080/15374416.2015.1094741

Sheras, P. L., Abidin, R. R., & Konold, T. R. (1998). *Stress index for parents of adolescents (SIPA)*. Lutz: Psychological Assessment Resources Inc.

Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-age children: the development and validation of a new criterion Q-sort scale. *Developmental Psychology, 33*, 906-916. doi: 10.1037/0012-1649.33.6.906

Shonin, E., Van Gordon, W. & Singh, N. N. (2015). *Buddhist Foundations of Mindfulness*. Springer.

Short, V. L., Gannon, M., Weingarten, W., Kaltenbach, K., LaNoue, M., & Abatemarco, D. J. (2017). Reducing stress among mothers in drug treatment: A description of a mindfulness based parenting intervention. *Maternal and Child Health Journal, 21*, 1377-1386. doi: 10.1007/s10995-016-2244-1

Siegel, D. J., & Hartzell, M. (2004). *Parenting from the inside out: How a deeper self-understanding can help you raise children who thrive*. New York: Penguin.

Silverman, W. K., Marin, C. E., Rey, Y., Jaccard, J., & Pettit, J. W. (2021). Directional effects of parent and child anxiety1 year following treatment of child anxiety, and the mediational role of parent psychological control. *Depression and Anxiety*. doi: 10.1002/da.23210

Singh, N. N., Lancioni, G. E., Medvedev, O. N., Hwang, Y. S., & Myers, R. E. (2020). A component analysis of the Mindfulness-Based Positive Behavior Support (MBPBS) Program for mindful parenting by mothers of children with autism spectrum disorder. *Mindfulness, 12*, 463-475. doi: 10.1007/s12671-020-01376-9

Singh, N. N., Lancioni, G. E., Winton, A. S., Fisher, B. C., Wahler, R. G., Mcaleavey, K., Singh, J. & Sabaawi, M. (2006). Mindful parenting decreases aggression, noncompliance, and self-injury in children with autism. *Journal of Emotional and Behavioral Disorders*, *14*, 169-177. doi: 10.1177%2F10634266060140030401

Singh, N. N., Lancioni, G. E., Winton, A. S., Singh, J., Curtis, W. J., Wahler, R. G., & McAleavey, K. M. (2007). Mindful parenting decreases aggression and increases social behavior in children with developmental disabilities. *Behavior Modification, 31*, 749-71. doi: 10.1177/0145445507300924.

Skreden, M., Skari, H., Malt, U. F., Pripp, A. H., Björk, M. D., Faugli, A., & Emblem, R. (2012). Parenting stress and emotional wellbeing in mothers and fathers of preschool children. *Scandinavian Journal of Public Health, 40*, 596-604. doi: 10.1177/1403494812460367

Smith, A. M., & Jensen-Doss, A. (2017). Youth psychotherapy outcomes in usual care and predictors of outcome group membership. *Psychological Services, 14*, 66-76. doi: 10.1037/ser0000115

Sparrow, S., Balla, D. A., & Cicchetti, D. (1984). *Vineland Adaptive Behavior Scales.* 2nd ed. Minneapolis, MN: Pearson.

Stern J.A., Borelli J. L., & Smiley P. A. (2015). Assessing parental empathy: A role for empathy in child attachment. *Attachment and Human Development, 17*, 1-22. doi: 10.1080/14616734.2014.969749

Sterne, J. A. C., Hernán, M. A., Reeves, B. C., Savović, J., Berkman, N. D., Viswanathan, M., Henry, D., Altman, D. G., Ansari, M. T., Boutron, I., Carpenter, J. R., Chan, A. W., Churchill, R., Deeks, J. J., Hrøbjartsson, A., Kirkham, J., Jüni, P., Loke, Y. K., Pigott, T. D., ... Higgins, J. P. T. (2016). ROBINS-I: A tool for assessing risk of bias in non-randomised studies of interventions. *British Medical Journal, 355*. doi: 10.1136/bmj.i4919

Stone, L. L., Mares, S. H. W., Otten, R., Engels, R. C. M. E., & Janssens, J. M. A. M. (2016). The co-development of parenting stress and childhood internalizing and externalizing problems. *Journal of Psychopathology and Behavioral Assessment, 38*, 76-86. doi: 10.1007/s10862-015-9500-3

Suveg, C., Shaffer, A., Morelen, D., & Thomassin, K. (2011). Links between maternal and child psychopathology symptoms: Mediation through child emotion regulation and moderation through maternal behavior. *Child Psychiatry and Human Development, 42*, 507–520. doi: 10.1007/s10578-011-0223-8

Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *Journal of Clinical Child and Adolescent Psychology, 33*, 750-759. doi: 10.1207/s15374424jccp3304_10

Swan, A. J., & Kendall, P. C. (2016). Fear and missing out: Youth anxiety and functional outcomes. *Clinical Psychology Science and Practice, 23*, 417-435. doi: 10.1111/cpsp.12169

Swanson, J. M., Schuck, S., Porter, M. M., Carlson, C., Hartman, C. A., Sergeant, J. A., Clevenger, W., Wasdell, M., McCleary, R., Lakes, K., & Wigal, T. (2012). Categorical and dimensional definitions and evaluations of symptoms of ADHD: History of the SNAP and the SWAN rating scales. *The International Journal of Educational and Psychological Assessment*, *10*, 51–70.

Tiwari, S., Podell, J. C., Martin, E. D., Mychailyszyn, M. P., Furr, J. M., & Kendall, P. C. (2008). Experiential avoidance in the parenting of anxious youth: Theory, research, and future directions. *Cognition and Emotion, 22*, 480-496. doi: 10.1080/02699930801886599

Thornton, L., Batterham, P. J., Fassnacht, D. B., Kay-Lambkin, F., Calear, A. L., & Hunt, S. (2016). Recruiting for health, medical or psychosocial research using Facebook: Systematic review. *Internet Interventions, 4*, 72-81. doi: 10.1016/j.invent.2016.02.001

Townshend, K., Jordan, Z., Stephenson, M., & Tsey, K. (2016). The effectiveness of mindful parenting programs in promoting parents' and children's wellbeing: A systematic review. *JBI Database of Systematic Reviews and Implementation Reports*. doi: 10.11124/JBISRIR-2016-2314

Turpyn, C. C., & Chaplin, T. M. (2016). Mindful parenting and parents' emotion expression: Effects on adolescent risk behaviors. *Mindfulness, 7*, 246-254.

Turpyn, C. C., Chaplin, T. M., Fischer, S., Thompson, J. C., Fedota, J. R., Baer, R. A., & Martelli, A. M. (2019). Affective neural mechanisms of a parenting-focussed mindfulness intervention. *Mindfulness*. doi: 10.1007/s12671-019-01118-6.

van Dam, N. T., Sheppard, S. C., Forsyth, J. P., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of Anxiety Disorders, 25*, 123-130. doi: 10.1016/j.janxdis.2010.08.011

van der Oord, S., Bögels, S. M., & Peijnenburg, D. (2012). The effectiveness of mindfulness training for children with ADHD and mindful parenting for their parents. *Journal of Child and Family Studies, 21*, 139-147. doi: 10.1007/s10826-011-9457-0

van de Weijer-Bergsma, E., Formsma, A. R., de Bruin, E. I., & Bögels, S. M. (2012). The effectiveness of mindfulness training on behavioral problems and attentional functioning in adolescents with ADHD. *Journal of Child and Family Studies, 21*, 775-787. doi: 10.1007/s10826-011-9531-7

van der Sluis, C. M., van der Bruggen, C. O., Brechmann-Toussaint, M. L., Thissen, M. A. P., & Bögels, S. M. (2012). Parent-directed cognitive behavioral therapy for young anxious children: A pilot study. *Behavior Therapy, 43*, 583-592. doi: 10.1016/j.beth.2011.10.002

van Steensel F. J., Bögels, S. M., & Perrin, S. (2011). Anxiety disorders in children and adolescents with autistic spectrum disorders: A meta-analysis. *Clinical Child and Family Psychology Review, 14*, 302-17. doi: 10.1007/s10567-011-0097-0

Vaughan, E. L., Feinn, R., Bernard, S., Brereton, M., & Kaufman, J. S. (2012). Relationships between child emotional and behavioral symptoms and caregiver strain and parenting stress. *Journal of Family Issues*, *34*, 534-556. doi: 10.1177%2F0192513X12440949

Veerman, J. W., Kroes, G., De Meyer, R. E., Nguyen, L. M., & Vermulst, A. A. (2014). Opvoedingsbelasting in kaart gebracht. Een kennismaking met de Opvoedingsbelastingvragenlijst (OBVL). doi: 10.1007/s12452-014-0016-0

Venta, A., Velez, L., & Lau, J. (2016). The role of parental depressive symptoms in predicting dysfunctional discipline among parents at high-risk for child maltreatment. *Journal of Child and Family Studies, 25*, 3076-3082. doi:10.1007/s10826-016-0473-y

Vollestad, J., Nielsen, M. B., & Nielsen, G. H. (2012). Mindfulness- and acceptance-based interventions for anxiety disorders: A systematic review and meta-analysis. *British Journal of Clinical Psychology, 51,* 239-260. doi: 10.1111/j.2044-8260.2011.02024.x

Voos, A. C. (2017). *An Initial Evaluation of the Mindful Parenting Group for Parents of Children with Autism Spectrum Disorder (*Record number 10634080) [Doctoral dissertation, University of California]. ProQuest Dissertations and Theses.

Wald, N., Carthy, T., Shenaar-Golan, V., Tadmor-Zisman, Y., & Ziskind, M. (2018). Influence of maternal negative emotion reactivity and cognitive reappraisal on child anxiety disorder. *Depression and Anxiety, 35*, 353–359. doi: 10.1002/da.22745

Wang, Y., Liang, Y., Fan, L., Lin, K., Xie, X., Pan, J., & Zhou, H. (2018). The indirect path from mindful parenting to emotional problems in adolescents: The role of maternal warmth and adolescents' mindfulness. *Frontiers in Psychology, 9*, 546. doi: 10.3389/fpsyg.2018.00546

Weinstein, N., Brown, K. W., & Ryan, R. M. (2009). A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *Journal of Research in Personality, 43*, 374–385. doi: 10.1016/j.jrp.2008.12.008

Wheeler, M. S., Arnkoff, D. B., & Glass, C. R. (2017). The neuroscience of mindfulness: How mindfulness alters the brain and facilitates emotion regulation. *Mindfulness, 8*, 1471-1487. doi: 10.1007/s12671-017-0742-x

Whitaker, C., Stevelink, S., & Fear, N. (2017). The use of Facebook in recruiting participants for health research purposes: A systematic review. *Journal of Medical Internet Research*, *19*, e290. doi: 10.2196/jmir.7071

Whitehead, A. L., Julious, S. A., Cooper, C. L., & Campbell, M. J. (2016). Estimating the sample size for a pilot randomised trial to minimise the overall trial sample size for

the external pilot and main trial for a continuous outcome variable. *Statistical Methods in Medical Research, 25*, 1057-1073. doi: 10.1177/0962280215588241

Willner, C. J., Gatze-Kopp, L. M., & Bray, B. C. (2016). The dynamics of internalizing and externalizing comorbidity across the early school years. *Developmental Psychopathology, 28*, 1033-1052. doi: 10.1017/S0954579416000687

Wolk, C. B., Caporino, N. E., McQuarrie, S., Settipani, C. A., Podell, J. L., Crawley, S., Beidas, R. S., & Kendall, P. C. (2016). Parental Attitudes, Beliefs, and Understanding of Anxiety (PABUA): Development and psychometric properties of a measure. *Journal of Anxiety Disorders*, *39*, 71–78. doi: 10.1016/j.janxdis.2016.03.001

Wong, K., Hicks, L. M., Seuntjens, T. G., Trentacosta, C. J., Hendriksen, T. H., Zeelenberg, M., & van den Heuvel, M. I. (2019). The role of mindful parenting in individual and social decision-making in children. *Frontiers in Psychology*, *10*, 550. doi: 10.3389/fpsyg.2019.00550

Xu, Y. (2017). *Parental stress, emotion regulation, meta-emotion, and changes following an MBSR intervention* (Record number 10622067) [Doctoral dissertation, Loma Linda University]. ProQuest Dissertations and Theses.

Yap, M. B. H., & Jorm, A. F. (2015). Parental factors associated with childhood anxiety, depression and internalizing problems: A systematic review and meta-analysis. *Journal of Affective Disorders, 175*, 424-440. doi: 10.1016/j.jad.2015.01.050

Yap, M. B. H., Pilkington, P. D., Ryan, S. M., & Jorm, A. F. (2014). Parental factors associated with childhood anxiety, depression and internalizing problems: A systematic review and meta-analysis. *Journal of Affective Disorders, 175*, 424-440. doi: 10.1016/j.jad.2015.01.050

Yap, M. B. H., Morgan, A. J., Cairns, K., Jorm, A. F., Hetrick, S. E., & Merry, S. (2016). Parents in prevention: A meta-analysis of randomized controlled trials of parenting

interventions to prevent internalizing problems in children from birth to age 18. *Clinical Psychology Review, 50,* 138–158. doi: 10.1016/j.cpr.2016.10.003

Zahra, D., & Hedge, C. (2010). The Reliable Change Index: Why isn't it more popular in academic psychology? *PsyPAG Quarterly, 76*, 14-19.

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools: A systematic review and meta-analysis. *Frontiers in Psychology, 5*, 1-20. doi: 10.3389/fpsyg.2014.00603

Zhang, D., Chan, S. K. C., Lo, H. M., Chan, C. Y. H., Chan, J. C. Y., Ting, K. T., Gao, T. T., Lai, K. Y. C., Bögels, S. M., & Wong, S. Y. S. (2017). Mindfulness-based intervention for Chinese children with ADHD and their parents: A pilot mixed-method study. *Mindfulness*, *8*, 859-872. doi: 10.1007/s12671-016-0660-3

Zhang, W., Wang, M., & Ying, L. (2019). Parental mindfulness and preschool children's emotion regulation: The role of mindful parenting and secure parent-child attachment. *Mindfulness*. doi: 10.1007/s12671-019-01120-y.

Zou, L., Yeung, A., Quan, X., Boyden, S. D., & Wang, H. (2018). A systematic review and meta-analysis of mindfulness-based (baduanjin) exercise for alleviating musculoskeletal pain and improving sleep quality in people with chronic diseases. *International Journal of Environmental Research and Public Health, 25*. doi: 10.3390/ijerph15020206

Appendices

frontiers in Psychology

Appendix A1

SYSTEMATIC REVIEW
published: 06 June 2019
doi: 10.3389/fpsyg.2019.01336

The Effect of Mindfulness Interventions for Parents on Parenting Stress and Youth Psychological Outcomes: A Systematic Review and Meta-Analysis

Virginia Burgdorf, Marianna Szabó and Maree J. Abbott*

School of Psychology, The University of Sydney, Sydney, NSW, Australia

Background: The psychological well-being of parents and children is compromised in families characterized by greater parenting stress. As parental mindfulness is associated with lower parenting stress, a growing number of studies have investigated whether mindfulness interventions can improve outcomes for families. This systematic review and meta-analysis evaluates the effectiveness of mindfulness interventions for parents, in reducing parenting stress and improving youth psychological outcomes.

Methods: A literature search for peer-reviewed articles and dissertations was conducted in accordance with PRISMA guidelines in the PsycInfo, Medline, PubMed, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials, and ProQuest Dissertations & Theses databases. Studies were included if they reported on a mindfulness-based intervention delivered in person to parents with the primary aim of reducing parenting stress or improving youth psychological outcomes.

Results: Twenty-five independent studies were included in the review. Eighteen studies used a single group design and six were randomized controlled trials. Within-groups, meta-analysis indicated a small, post-intervention reduction in parenting stress ($g = 0.34$), growing to a moderate reduction at 2 month follow-up ($g = 0.53$). Overall, there was a small improvement in youth outcomes ($g = 0.27$). Neither youth age or clinical status, nor time in mindfulness training, moderated parenting stress or overall youth outcome effects. Youth outcomes were not moderated by intervention group attendees. Change in parenting stress predicted change in youth externalizing and cognitive effects, but not internalizing effects. In controlled studies, parenting stress reduced more in mindfulness groups than control groups ($g = 0.44$). Overall, risk of bias was assessed as serious.

Conclusions: Mindfulness interventions for parents may reduce parenting stress and improve youth psychological functioning. While improvements in youth externalizing and cognitive outcomes may be explained by reductions in parenting stress, it appears that other parenting factors may contribute to improvements in youth

OPEN ACCESS

Edited by:
Helena Moreira,
University of Coimbra, Portugal

Reviewed by:
Eleonora Volpato,
Fondazione Don Carlo Gnocchi Onlus (IRCCS), Italy
Marco Pereira,
University of Coimbra, Portugal

****Correspondence:***
Virginia Burgdorf
virginia.burgdorf@sydney.edu.au

Specialty section:
This article was submitted to Psychology for Clinical Settings, a section of the journal Frontiers in Psychology

Received: *31 October 2018*
Accepted: *22 May 2019*
Published: *06 June 2019*

Citation:
Burgdorf V, Szabó M and Abbott MJ (2019) The Effect of Mindfulness Interventions for Parents on Parenting Stress and Youth Psychological Outcomes: A Systematic Review and Meta-Analysis. Front. Psychol. 10:1336. doi: 10.3389/fpsyg.2019.01336

internalizing outcomes. Methodological weaknesses in the reviewed literature prevent firm conclusions from being drawn regarding effectiveness. Future research should address these methodological issues before mindfulness interventions for parents are recommended as an effective treatment option for parents or their children.

Keywords: mindfulness, mindful parenting, parenting intervention, parenting stress, child externalizing, child internalizing, meta-analysis, systematic review

INTRODUCTION

Parenting stress is associated with negative outcomes for parents and their children (Davis and Carter, 2008; Deater-Deckard et al., 2016). Recently, several studies have linked lower parenting stress with higher parental mindfulness (e.g., Parent et al., 2016; Campbell et al., 2017). Accordingly, a growing number of studies have delivered mindfulness-based interventions to parents, with the aim of reducing parenting stress and improving psychological outcomes for youth (e.g., Zhang et al., 2017; Jones et al., 2018). However, no quantitative synthesis of the literature on the effectiveness of such interventions is currently available. This review and meta-analysis was conducted to evaluate the effectiveness of mindfulness interventions for parents, in reducing parenting stress and improving youth psychological outcomes.

Parents who experience higher parenting stress report poorer psychological well-being (Lavee et al., 1996), more negative affect and less positive affect (Deater-Deckard et al., 2016), and lower marital quality (Robinson and Neece, 2015). In families characterized by greater parenting stress, children have more internalizing and externalizing problems (Huth-Bocks and Hughes, 2007; Davis and Carter, 2008; Robinson and Neece, 2015), poorer cognitive skills such as executive function (de Cock et al., 2017) and more social and interpersonal difficulties (Anthony et al., 2005). Greater parenting stress is also associated with negative parenting behaviors, including harsh discipline (Venta et al., 2016) and hostility (McMahon and Meins, 2012), which have been shown to contribute to poorer child and adolescent psychological outcomes (Rominov et al., 2016; Pinquart, 2017). Managing parenting stress is therefore important for the well-being of parents and their children. It has been suggested that incorporating mindfulness into the parent-child relationship may be one way of achieving this goal (Kabat-Zinn and Kabat-Zinn, 1997; Dumas, 2005; Duncan et al., 2009; Bögels et al., 2010).

In the context of contemporary Western psychology, mindfulness is typically described as a psychological process of bringing non-judgmental awareness to experiences occurring in the present moment (Kabat-Zinn, 2015). Individuals differ in their disposition for mindfulness but can develop their skills through regular practice (Kabat-Zinn, 2003, 2015; Baer et al., 2006). The application of mindfulness to parenting was first described by Kabat-Zinn and Kabat-Zinn (1997). These authors defined mindful parenting as paying non-judgmental, non-reactive attention to each moment and interaction with the child, such that the parent is aware of their child's needs in any moment. Building on this account, Duncan et al. (2009) developed a model of mindful parenting comprising five dimensions: listening to the child with full attention, non-judgmental acceptance of self and child, emotional awareness of self and child, self-regulation in parenting, and compassion for self and child. Mindful parents reduce their use of automatic but unhelpful ways of evaluating or interacting with their child, thus making way for more positive parent-child relationships (Dumas, 2005; Duncan et al., 2009). For example, mindfulness can assist parents to break a habitual pattern of automatically reacting with anger to a child's tantrum, which is likely to elicit further negative affect from the child (Dumas, 2005).

In light of these ideas, mindfulness-based interventions such as the 8-week Mindfulness-based Stress Reduction program (MBSR; Kabat-Zinn et al., 1992), have been offered to parents who experience high levels of stress, anxiety, or depression (Bazzano et al., 2015). Other researchers have adapted the MBSR program specifically to the parenting context (Bögels et al., 2014; Eames et al., 2015). These mindful parenting programs are based upon the same principles of mindfulness as MBSR and follow a similar session structure. MBSR for parents and mindful parenting programs both aim to improve outcomes for families, particularly reducing parenting stress (for example, Neece, 2014; Chaplin et al., 2018). However, mindful parenting programs focus specifically on the stressors faced by parents and the patterns of interaction they have with their children. For example, the well known "observing a raisin" exercise is used in MBSR to illustrate the concept of stepping out of automatic pilot. In one mindful parenting course (Bögels and Restifo, 2014), this exercise is followed by a homework practice in which parents mindfully observe their child, using the skills they learnt while observing a raisin.

In the past decade, a number of studies have explored the effects of both MBSR and mindful parenting interventions on parenting stress. Following MBSR programs, reductions in parenting stress were reported by parents of pre-school aged children with Autism Spectrum Disorder (ASD) and other developmental delays (Chan and Neece, 2018). In a similar clinical sample, the reductions in parenting stress were larger for the MBSR group than a waitlist control group (Neece, 2014). Mindful parenting interventions have been offered in community, as well as in clinical settings. In two small studies of community-recruited parents, no reduction in parenting stress was found following mindful parenting training (Maloney and Altmaier, 2007; Eames et al., 2015), whilst in a larger community study, a reduction was reported (Potharst et al., 2018). The difference in sample sizes may account for the

contrasting findings in these studies. In the clinical context, parents of children and adolescents with a range of externalizing and internalizing disorders (Bögels et al., 2014; Ridderinkhof et al., 2017) reported both immediate and maintained reductions in parenting stress following mindful parenting interventions. In contrast, parents of children with Attention Deficit and Hyperactivity Disorder (ADHD) reported a moderate reduction in parenting stress only at 2 month follow-up (van der Oord et al., 2012). The majority of mindful parenting intervention studies have used a single group design. However, a small number of controlled studies have found mindful parenting groups report greater reductions in parenting stress than control groups, in community and clinical settings (Ferraioli and Harris, 2013; Lo et al., 2017a; Corthorn, 2018). In sum, although results are mixed, MBSR and mindful parenting interventions appear to be associated with reduced levels of parenting stress, both in community and clinical contexts.

Studies of MBSR and mindful parenting have also investigated outcomes for the children of parents who attended the interventions. Most studies investigated internalizing and externalizing symptoms, which are the most common psychological problems in youth (Bayer et al., 2008). A number of studies also examined cognitive and social domains of functioning, both of which are related to important longer term problems, such as poorer academic achievement (Malecki and Elliott, 2002; Daley and Birchwood, 2010). Following their parents' attendance at MBSR, pre-school aged children with ASD and other developmental delays showed significant improvements in cognitive, externalizing, and social outcomes (Neece, 2014; Lewallen and Neece, 2015). Following mindful parenting training, small to moderate reductions in youth internalizing problems have been reported by youth with a range of mental health problems and their parents (Bögels et al., 2014; Haydicky et al., 2015; Racey et al., 2017). In contrast, in a study involving 10 adolescents with ADHD, no significant improvements in adolescent internalizing problems were reported (van de Weijer-Bergsma et al., 2012). Similarly, externalizing problems have been reported to reduce after mindful parenting interventions by parents (Bögels et al., 2014; Meppelink et al., 2016) and youth (Bögels et al., 2008; Ridderinkhof et al., 2017) in some studies, but not in others (De Bruin et al., 2015; Jones et al., 2018). In relation to cognitive outcomes, parents have reported fewer attention problems (Ridderinkhof et al., 2017), but no reductions in metacognitive (Zhang et al., 2017) or learning problems (Haydicky et al., 2015). Finally, after mindful parenting interventions, youth social outcomes improved in some studies (Bögels et al., 2008; Haydicky et al., 2015) but not others (De Bruin et al., 2015; Jones et al., 2018). The results of the literature relating to youth outcomes are therefore mixed.

Considering the number of studies and the mixed results they report, a quantitative evaluation of the available data is needed. However, there are no published meta-analyses in this field of research. Further, although two narrative reviews have been conducted, neither of these focuses exclusively on mindfulness interventions delivered to parents. Harnett and Dawe (2012) reviewed 24 interventions incorporating mindfulness, for school students and their careers. Only two of those interventions were delivered to parents. Moreover, those two interventions were not primarily mindfulness interventions. Instead, they incorporated an element of mindfulness into existing behavioral skills programs. Townshend et al. (2016) reviewed seven randomized controlled trials (RCTs) of various interventions delivered to parents. Again, only two of the reviewed trials delivered interventions that were primarily mindfulness-based, while the others incorporated aspects of mindfulness in behavioral or emotion-coaching programs. A review focused upon mindfulness interventions for parents is therefore warranted. Accordingly, the aim of this review was to systematically and quantitatively evaluate the effectiveness of mindfulness interventions for parents. To reflect the range of outcomes covered in the existing literature, the outcomes of interest in this review were parenting stress, and youth functioning across internalizing, externalizing, cognitive, and social domains. Due to the noted similarities between mindful parenting interventions and other mindfulness-based interventions such as MBSR for parents, we amalgamated these studies into a single group and will refer to them together as "mindfulness interventions for parents."

METHODS

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement and checklist (Moher et al., 2009) were used to guide the conduct and reporting of this review.

Eligibility Criteria

Studies were eligible for inclusion in the review if they reported on a mindfulness-based intervention delivered in person to parents, with a primary aim of reducing parenting stress or improving youth psychological outcomes. Studies that met this criterion that also delivered a parallel mindfulness intervention to a child of the participant parents were included. Studies were excluded if they reported on an intervention that was not a mindfulness-based intervention or if the intervention incorporated other forms of therapy or training such as behavioral parent training, acceptance and commitment therapy or cognitive therapy. Studies were also excluded if they used an individual case series or qualitative design.

Search Strategy and Information Sources

A comprehensive literature search was conducted between 9 August and 11 October 2018, in the PsycInfo, Medline, PubMed, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials and ProQuest Dissertations & Theses databases, for peer-reviewed articles and published dissertations indexed up to and including 30 September, 2018. In PsycInfo, we searched the database subject headings Mindfulness and Meditation, and the keywords mindful* and meditation, in combination with the subject headings Parenting, Parents, Parenting Style, Parenting Skills, Parental Attitudes, Parent Training, Childrearing Attitudes, Childrearing Practices, Family Intervention and Family Therapy and the key words parent*, child?rearing, family intervention*, and family therap*. For the

search, no limitations were placed on the language in which the study was reported. The reference lists of included articles were also searched for relevant studies but no additional studies were identified in this way.

The database search was conducted by the first author. After removal of duplicates, a title and abstract screening of all articles was conducted by the first author to assess the studies against the eligibility criteria. One-third of the articles were also screened independently by a Masters-level graduate student in clinical psychology. A full-text review of the short-listed articles was then conducted independently by both the first author and the same graduate student, with 92% agreement between the two reviewers on the selection of studies for inclusion in the review.

Data Extraction

All data was extracted by the first author. The data extracted from each study included participant characteristics, youth age and gender, parent and youth psychopathology, study design, and details of the intervention. These study details are presented in **Table 1**.

Effect sizes reported by the study authors for parenting stress and youth psychological outcomes were also extracted and are included in **Tables 2**, **3**, respectively.

Quantitative data needed for calculation of effect sizes in the meta-analysis were also extracted. Where a study did not report the data required for calculation of effect sizes, they were requested by email from the corresponding author of the study. If no response was received, the study was included in the systematic review (in **Tables 1**–**3**), but not included in the quantitative analyses.

Data Analysis

The meta-analysis was conducted using the Comprehensive Meta-Analysis program, version 3.0 (CMA). Two types of summary effect were calculated, using means and standard deviations whenever these were available, and statistics such as *t* and *p* when they were not. For studies reporting pre- and post-intervention outcome data, we calculated Hedges' *g* within-group effect sizes. For studies comparing outcomes of mindfulness and control groups, we calculated Hedges' *g* between-group differences in effect size. Hedges' *g* is a weighted mean effect size that corrects for potential bias due to small sample sizes (Hedges and Olkin, 1985). Cohen's guidelines that an effect size of 0.20 is small, 0.50 is moderate and 0.80 is large (Cohen, 1988) may be applied to both Cohen's *d* and Hedges' *g* effect sizes. For all analyses, a correlation of $r = 0.70$ was assumed between pre- and post-intervention measures (Rosenthal, 1993). Random-effects models were used for main effects analyses, to reflect the assumption that the true effect size would vary from study to study because study participants were drawn from different populations. Each summary effect reported in this paper is therefore an estimate of the mean of a distribution of true effects (Borenstein et al., 2009). Heterogeneity amongst studies in each main-effect analysis was assessed using the *Q* and I^2 statistics. *Q* reflects the distance of each study from the summary effect. A significant *Q*-statistic indicates variance in true effects, rather than variance due only to random sampling error (Borenstein et al., 2009). I^2 reflects the proportion of observed variance in effects that is due to heterogeneity, or variance in true effects (Higgins et al., 2003). Higgins et al. suggest that I^2 values of 25, 50, and 75% indicate low, moderate, and high heterogeneity, respectively.

Several methodological issues arose in connection with the calculation of the summary effect size for parenting stress. All studies except one reported either a total parenting stress score or the score from a single parenting stress subscale. A parenting stress effect size was therefore calculated for each of these studies, using the single reported outcome score. However, Chaplin et al. (2018) reported separate data for three subscales of the Stress Index for Parents of Adolescents (SIPA; Sheras et al., 1998). Rather than including each of these three subscales as independent effects in the meta-analysis, the procedure described by Borenstein et al. (2009) was followed to create a single, composite effect for this study. Using a single effect ensures that additional weight is not given to this study, as would be the case if the subscales were treated as independent of each other. It also ensures that the precision of the summary effect is not over-estimated due to the positive correlations between each subscale (Borenstein et al., 2009). Under this procedure, the effects for each subscale were averaged to give a composite parenting stress effect size. To calculate the variance of the composite effect, a correlation between the subscales of $r = 0.55$ was used, based on the reported correlations between the three relevant subscales of $r = 0.52$–0.57 (Sheras et al., 1998). A similar issue arose in relation to the parenting stress reporter. Although the majority of studies presented data for a single parenting stress reporter, van de Weijer-Bergsma et al. (2012) reported separate data for mothers and fathers. As mothers and fathers were reporting their levels of stress in respect of the same adolescent, the mother and father effects were not independent. Accordingly, a composite mother/father effect size was calculated following the procedure described above, using a correlation between the two outcomes of $r = 0.60$. This *r*-value was chosen using the correlations between mother- and father-reports of child anxiety ($r = 0.68$) and parental rearing (*r*s between 0.39 and 0.49) reported in Bögels and van Melick (2004), as a guide. Finally, Potharst et al. (2018) reported data separately for parents participating in clinical and non-clinical settings. The effects reported for these two settings have been included separately in all analyses, as if they were data from two separate studies, because they are based on reports from independent groups of parents participating in independent settings.

Due to the limited number of studies reporting on specific youth psychological outcomes, a detailed quantitative analysis was not conducted in respect of each youth outcome covered by the reviewed studies. Instead, specific outcomes were grouped into internalizing, externalizing, cognitive, and social domains, as the reported outcomes all fell within one of these four domains of functioning. In addition, to provide a large enough pool of effects for moderator analyses to be conducted, a new "overall youth outcomes" variable was created. This variable was created by first calculating effect sizes for youth outcomes reported by parents and then calculating a single, composite parent-reported effect size for each study using the Borenstein et al. (2009)

TABLE 1 | Details of included studies.

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Bazzano et al. (2015)	$N = 66$ parents/caregivers (77% mothers/female)	NR	Non-clinical	Clinical: ASD (59%), ID (21%), cerebral palsy (5%), Down syndrome (3%), other diagnoses (11%)	Uncontrolled trial: 1. MP	MBSR adapted for parents of children with disabilities	Parent/caregiver group	8 weeks × 2 h + 4 h silent retreat; total 20 h
Bögels et al. (2008)	$N = 14$ parents (57% mothers) and 14 adolescents	$M = 14.4$ (11–17) 57% boys	Clinical: DD (21%), PTSD (21%), ADHD (14%), PDD (14%), Asperger's (7%)	Clinical: ODD (43%), PDD (21%), ADHD (14%), CD (14%) ASD (7%)	WLC trial: 1. MP	MBCT adapted for parents	Parent group and separate adolescent mindfulness group	8 weeks × 1.5 h; total 12 h (for both parent and adolescent groups)
Bögels et al. (2014)	$N = 86$ parents (89% mothers)	$M = 10.7$ (2–21) 60% boys	Clinical: Parent-child relational problem (58%), DD (16%), adjustment disorder (8%), BD (2%), ADHD (1%), BPD (1%)	Clinical: ADHD (47%), ASD (21%), AD (7%), DD (5%), ODD (4%), LD (4%), CD (1%), schizophrenia (1%)	WLC trial: 1. MP	MP (Bögels and Restifo, 2013)	Parent group	8 weeks × 3 h; total 24 h
Chan and Neece (2018)#	$N = 80$ parents (96% mothers)	$M = 4.18$ (2.5–5) 71% boys	Non-clinical	Clinical: ASD (64%), other developmental delay (36%)	RCT: 1. MBSR 2. Wait list control	MBSR: MBSR program Control: Nil (offered MBSR program after completion of waitlist period)	MBSR: Parent group Control: Nil	MBSR: 8 weeks × 2 h + 6 h retreat; total 22 h Control: Nil
Chaplin et al. (2018)	$N = 100$ mothers	$M = 14.04$ (12–17) 48% boys	Non-clinical: self-reported parenting stress	Non-clinical: inclusion criteria did not require diagnosis or referral, but 53% of families receiving psychotherapy	RCT: 1. MP 2. Parent education control	MP: Parenting Mindfully (based on MBSR and Duncan et al., 2009) Control: presentation, handouts on adolescent development and parenting, question time	MP: Parent group Control: Parent group	MP: 8 weeks × 2 h; total 16 h Control: 3 meetings × 30 min each
Corthorn (2018)	$N = 43$ mothers	$M = 2.9$ (intervention group) and $M = 3.0$ (control group). Overall range = 2–5 Gender NR	Non-clinical	Non-clinical	Controlled trial: 1. MP 2. No treatment control	MP: MBSR adapted for parents Control: Nil	MP: Parent group Control: Nil	MP: 8 weeks × 2 h; total 16 h Control: Nil
De Bruin et al. (2015)	$N = 29$ parents (62% mothers) and 23 adolescents	$M = 15.8$ (11–23) 74% boys	Non-clinical	Clinical: ASD (52%), PDD (48%)	Uncontrolled trial: 1. MP	MP (Bögels and Restifo, 2013)	Parent group and separate adolescent mindfulness group	9 weeks × 1.5 h; total 13 h (for both parent and adolescent groups)
Eames et al. (2015)	$N = 23$ mothers	$M = 3.14$ (1–6) 55% boys	Non-clinical: low socio-economic community	Non-clinical	Uncontrolled trial: 1. MP	Mindfulness-based well-being for parents (adapted from MBSR)	Parent group	8 weeks × 2 h; total 16 h

(Continued)

TABLE 1 | Continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Ferraioli and Harris (2013)	*N* = 15 parents (66% mothers)	NR (all under 18)	Non-clinical	Clinical: ASD (66%), PDD (34%)	RCT: 1. MP 2. Skills-based parent training Participants matched on parenting stress scores.	MP: Mindfulness-based parent training (adapted from mindfulness module, Linehan, 1993) Control: behavioral parent training for parents of children with ASD	MP: Parent group Control: Parent group	MP: 8 weeks × 2 h; total 16 h Control: 8 weeks × 2 h; total 16 h
Haydicky et al. (2015)	*N* = 17 parents (94% mothers) and 18 adolescents	*M* = 15.5 (13–18) 72% boys	Non-clinical	Clinical: ADHD	WLC trial: 1. MP	MP (adapted from Bögels et al., 2008)	Parent group and separate adolescent mindfulness group	8 weeks × 1.5 h; total 12 h (for both parent and adolescent groups)
Jones et al. (2018)	*N* = 21 parents (86% mothers)	*M* = 10.53 (4–16) Note: mean VABS functioning ability = 4.95 62% boys	Non-clinical	Clinical: ASD (76%), ID (10%), cerebral palsy (10%), Down's syndrome (5%)	Uncontrolled trial: 1. MP	Mindfulness-based wellbeing for parents (adapted from MBSR)	Parent group	8 weeks × 2 h; total 16 h
Lewallen and Neece (2015)#	*N* = 24 mothers	*M* = 3.40 (2.5–5) 67% boys	Non-clinical	Clinical: ASD (83%), other developmental delay (17%)	RCT: 1. MBSR 2. Wait list control	MBSR: MBSR program Control: Nil (offered MBSR after waitlist)	MBSR: Parent group Control: Nil	MBSR: 8 weeks × 2 h + 6 h retreat; total 22 h Control: Nil
Lo et al. (2017a)	*N* = 180 parents (94% mothers)	NR (pre-school age) 77% boys	Non-clinical	Clinical: ASD (57%), developmental delay (28%), ADHD (7%), other diagnosis (8%)	RCT: 1. MP 2. No treatment control	MP: MP adapted from Bögels (2013) and Coatsworth et al. (2014) Control: Nil (mindfulness workshop, after study)	MP: Parent group Control: Nil	MP: 6 weeks × 1.5 h; total 9 h Control: Nil
Lo et al. (2017b)	*N* = 100 parents (96% mothers)	*M* = 6.25 (5–7) 83% boys	Non-clinical	Clinical: ADHD	RCT: 1. MP 2. Wait list control	MP: MP adapted from Bögels and Restifo (2014) and Coatsworth et al. (2010) Control: Nil (offered MP after waitlist)	MP: Parent group and separate child mindfulness group Control: Nil	MP: 6 weeks × 1.5 h; total 9 h (for parent groups). 8 weeks × 1 h (for child groups). Control: Nil
Maloney and Altmaier (2007)	*N* = 12 parents (83% mothers) and 12 children	*M* = 3.9 (2.75–6) Gender NR	Non-clinical: participants recently divorced or separated	Non-clinical	Uncontrolled trial: 1. MP	MP (Placone-Willey, 2002)	Parent group	12 weeks; session length NR; total 15 h
Mann et al. (2016)	*N* = 38 parents (95% mothers)	Mean NR (2–6) Gender NR	Non-clinical: history of depression (≥ 3 episodes and in full/partial remission)	Non-clinical	RCT: 1. MP + usual care 2. Usual care control	MP: MBCT adapted for parents with history of depression Control: usual care	MP: Parent group Control: Nil	MP: 8 weeks, session length and total hours NR Control: Nil

(Continued)

TABLE 1 | Continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
Meppelink et al. (2016)	*N* = 70 parents (93% mothers)	*M* = 8.7 (range NR) 57% boys	Non-clinical	Clinical: ASD (29%), parent-child interaction problem (26%), ADHD (24%), AD (3%), ODD (1.5%), adjustment disorder (1.5%), other diagnosis (6%)	Uncontrolled trial: 1. MP	MP (Bögels and Restifo, 2014)	Parent group	8 weeks × 3 h; total 24 h
Neece (2014)	*N* = 46 parents (78% mothers)	*M* = 3.84 (2.5–5) 71% boys	Non-clinical	Clinical: ASD	RCT: 1. MBSR 2. Wait list control	MBSR: MBSR Control: Nil (offered MBSR after waitlist)	MBSR: Parent group Control: Nil	MBSR: 8 weeks × 2 h + 6 h retreat; total 22 h Control: Nil
Potharst et al. (2017)	*N* = 37 mothers	*M* = 0.86 (0–1.5) 50% boys	Clinical: mental health disorder (84%) or referral for difficulties related to mothering	Non-clinical: sleeping problems (27%), excessive crying (18%)	Uncontrolled trial: 1. MP	MP adapted for mothers with a baby (Bögels et al., 2014)	Mother/baby group	8 weeks × 2 h; total 16 h
Potharst et al. (2018)[a] Non-clinical setting	*N* = 98 parents (82% mothers)	*M* = 8.9 (0–35.3) Gender NR	Non-clinical, self-reported parenting stress	Non-clinical	WLC trial: 1. MP	MP shortened for non-clinical context (Bögels and Restifo, 2013)	Parent group	8 weeks × 2 h; total 16 h[b]
Potharst et al. (2018) Clinical setting	*N* = 89 parents (80% mothers)	*M* = 11.7 (2.6–25.4) Gender NR	Non-clinical	Clinical: ADHD (31%), ASD (23%), DICA (10%), AD (5%), PTSD (4%), MD (1%), OCD (1%), ODD (1%), IED (1%), unknown diagnosis (21%)	Uncontrolled trial: 1. MP	MP (Bögels and Restifo, 2013)	Parent group	8 weeks × 3 h + 3 h booster session, 8 weeks post-completion; total 27 h [c]
Racey et al. (2017)	*N* = 29 parents (97% mothers) and 25 adolescents	*M* = 16.4 (14–18) 0% boys	Non-clinical: 50% parents had history of depression	Clinical: partially recovered from depressive episode	Uncontrolled trial: 1. MBCT	MBCT adapted for parents and youth	Parent group and separate adolescent mindfulness group	8 weeks (for both parent and adolescent groups); session length and total hours NR
Ridderinkhof et al. (2017)	*N* = 74 parents (58% mothers) and 45 adolescents	*M* = 13.03 (8–19) 80% boys	Non-clinical	Clinical: ASD (IQ ≥ 80)	Uncontrolled trial: 1. MP	MP adapted for parents of children with ASD from Bögels and Restifo (2014)	Parent group and separate adolescent mindfulness group	9 weeks × 1.5 h (for both parent and adolescent groups) + 1x joint parent/ adolescent booster session, 9 weeks post-completion; total 15 h
Short et al. (2017)	*N* = 59 mothers	NR (≤ 3) Gender NR	Clinical: in treatment for opioid and other substance-use disorders	Non-clinical	Uncontrolled trial: 1. MP	MP adapted from MBSR for parents with high rates of trauma	Parent group	12 weeks × 2 h; total 24 h
van de Weijer-Bergsma et al. (2012)	*N* = 11 parents (55% mothers) and 10 adolescents	*M* = 13.4 (11–15) 50% boys	Non-clinical	Clinical: ADHD	Uncontrolled trial: 1. MP	MP (Bögels et al., 2008 and van der Oord et al., 2012)	Parent group and separate adolescent mindfulness group	8 weeks × 1.5 h (for both parent and child groups) + 1x joint parent/ adolescent booster session, 8 weeks post-completion; total ∼13 h

(Continued)

TABLE 1 | Continued

Study	Sample size and parents' gender	Youth age (range) in years and gender	Parent clinical status^	Youth clinical status and primary diagnosis	Study design and conditions	Intervention characteristics		
						Intervention program	Intervention group/s	Sessions
van der Oord et al. (2012)	*N* = 22 parents (95% mothers) and 22 children	*M* = 9.55 (8–12) 73% boys	Non-clinical	Clinical: ADHD	WLC trial: 1. MP	MP adapted for parents of children with ADHD from Bögels et al. (2008) and Bögels et al. (2010)	Parent group and separate mindfulness group for children	8 weeks × 1.5 h; total 12 h (for both parent and child groups)
Voos (2017)	*N* = 21 parents (71% mothers)	M = 9.5 (range NR; <18) 91% boys	Non-clinical	Clinical: ASD	Uncontrolled trial: 1. MP	MP (Bögels and Restifo, 2013)	Parent group	8 weeks × 1.5 h; total 12 h
Xu (2017)#	*N* = 32 parents (90% mothers)	M = 4.68 (2.5–5) 71% boys	Non-clinical	Clinical: ASD (48%), ID or other developmental delay (36%), Down's syndrome (16%)	Uncontrolled trial: 1. MBSR	MBSR	Parent group	8 weeks × 2 h + 6 h retreat; total 22 h
Zhang et al. (2017)	*N* = 11 parents (64% mothers) and 11 children	*M* = 9.5 (8–12) 73% boys	Non-clinical	Clinical: ADHD	Uncontrolled trial: 1. MP	MP (van der Oord et al., 2012; van de Weijer-Bergsma et al., 2012)	Parent group and separate child mindfulness group	8 weeks × 1.5 h; total 12 h (for both parent and child groups)

^*For both parent and youth clinical status, "Clinical" means that the participating parent or their child were selected for the study based on either a clinical diagnosis, or referral for clinical assistance, for a mental health difficulty. "Non-clinical" means the participating parents, or their child, were not selected for the study based on either a clinical diagnosis or referral for clinical assistance. A non-clinical group of parents or youth may still, therefore, include individuals who meet criteria for a psychiatric or physical health condition; NR, Not reported; MBSR, Mindfulness-Based Stress Reduction (Kabat-Zinn et al., 1992); MBCT, Mindfulness-Based Cognitive Therapy (Segal et al., 2002); MP, mindful parenting; WLC, waitlist controlled; RCT, randomized, controlled trial; ASD, an autism spectrum disorder; ID, an intellectual disability; DD, a depressive disorder; PTSD, post-traumatic stress disorder; ADHD, attention deficit/hyperactivity disorder; PDD, pervasive developmental disorder; ODD, oppositional defiant disorder; CD, conduct disorder; BD, bipolar disorder; BPD, borderline personality disorder; AD, anxiety disorder; LD, learning disorder; OCD, obsessive compulsive disorder; MD, mood disorder; IED, intermittent explosive disorder; DICA, disorder of infancy, childhood or adolescence not otherwise specified; VABS, Vineland Adaptive Behavior Scales (Sparrow et al., 1984); #Chan and Neece (2018), Lewallen and Neece (2015), and Xu (2017) are included in this table for clarity, however these three studies appear to utilize samples of participants overlapping with Neece (2014); aPotharst et al. (2018) included two separate streams of participants. One stream attended the intervention in non-clinical settings, the other attended in clinical settings. Study characteristics are reported separately for each setting, given they were independent from each other; bbasic non-clinical program was 8 weeks × 2 h. However, there were 4 locations (A, B, C, and D) and some varied the basic program. B ran 2.5 h sessions, D ran 3 h sessions, and B and D offered a follow-up session; cbasic clinical program was 8 weeks × 3 h + 3 h booster. This was run at 4 locations (E, F, G, and H). Location E adjusted the session length to 2.5 h.*

TABLE 2 | Reported results of mindfulness intervention, for parenting stress.

Study	Parenting stress measure[#]	Within group results		Between group results	
		Pre-post	Pre-follow up^	Pre-post	Pre-follow up^
Bazzano et al. (2015)	PSS	NR[a] (+)	NR[a] (+)	–	–
Bögels et al. (2014)	PSI, Competence scale	$d = 0.44$ (+)	$d = 0.47$ (+)	–	–
Chaplin et al. (2018)	SIPA subscales:				
	Parent Life Restrictions	–	–	$d = 0.53$ (+)	–
	Parent Incompetence/Guilt	–	–	$d = -0.14$	–
	Relationship with Partner	–	–	$d = 0.59$ (+)	–
Corthorn (2018)	PSI–SF	–	–	NR (+)	$d = 0.66$ (+)
De Bruin et al. (2015)	PSI	$d = 0.21$ (+)	$d = -0.01$	–	–
Eames et al. (2015)	PSI–SF	$g = 0.81$[b]	–	–	–
Ferraioli and Harris (2013)	PSI–SF	$d = 2.03$ (+)	$d = 1.01$	$d = 1.59$ (+)	$d = 0.63$
Haydicky et al. (2015)	SIPA	NR	$d = 0.81$ (+)	–	–
Jones et al. (2018)	QRS-PFP	$d = -0.12$	–	–	–
Lo et al. (2017a)	PSI-SF	–	–	$d = 0.34$ (+)	–
Lo et al. (2017b)	PSI-SF	–	–	$d = 0.19$ (+)	–
	HRV Low frequency[c]	–	–	$d = 0.00$	–
Maloney and Altmaier (2007)	PSI-SF	$d = 0.26$	–	–	–
Mann et al. (2016)	PSI-SF	–	–	$d = 0.40$ (4 mo.)	$d = 0.40$ (9 mo.)
Neece (2014)	PSI-SF, Parental Distress scale	$d = 0.70$ (+)[d]	–	$d = 0.70$ (+)	–
Potharst et al. (2017)	PSI, modified version	$d = 0.25$	$d = 0.44$ (+); $d = 0.53$ (+) (1 yr.)	–	–
Potharst et al. (2018)	OBVL	$d = 0.37$ (+)	$d = 0.67$ (+)	–	–
Ridderinkhof et al. (2017)	PSI, Competence scale	$d = 0.21$ (+)	$d = 0.39$ (+); $d = 0.28$ (+) (1 yr.)	–	–
Short et al. (2017)	PSI-SF	$d = 0.04$	–	–	–
van de Weijer-Bergsma et al. (2012)	PSI–SF	$d = -0.50^{M}$; $d = 0.70^{F}$ (+)	$d = -0.20^{M}$; $d = 1.1^{F}$ (+)	–	–
van der Oord et al. (2012)	PSI-SF	NR (ns)	$d = 0.57$ (+)	–	–
Voos (2017)	PSI	NR	$d = 0.94$ (+)	–	–
Zhang et al. (2017)	PSI-SF	$d = -0.18$ (+)	–	–	–

[#] = all parenting stress effects are based upon the reports of the parent/s who attended the intervention, and therefore combine mother and father reports, except in the case of van de Weijer-Bergsma et al. (2012) which reports mother and father results separately; ^ = 8 week follow up, unless otherwise indicated; (+) indicates effect size is significant (as reported by the relevant study author/s), p <.05. For within-group results, effect size is reported as a positive number if there was improvement in the outcome, and as a negative number if there was a deterioration. For between-group results, effect size is reported as a positive number if the outcome improved more in the mindfulness group than the control group; NR = not reported; ns = not significant; [a] = d not reported, but % change reported as significant; [b] g = Hedges' glass; [c] = only low frequency heart rate variability (HRV) is included, as the effect for high frequency HRV was reported only as non-significant; [d] = the within-group parenting stress effect is reported in Xu (2017); [M] = mother; [F] = father; PSS = Parental Stress Scale (Berry and Jones, 1995); PSI = Parenting Stress Index (Abidin, 1983); PSI-SF = Parenting Stress Index, Short Form (Abidin, 1995); SIPA = Stress Index for Parents of Adolescents (Sheras et al., 1998); QRS-PFP = Questionnaire on Resources and Stress Short Form – Parent and Family Problems subscale (Friedrich et al., 1983); OBVL = Opvoedingsbelastingvragenlijst, Veerman et al. (2014), a Dutch parenting stress questionnaire.

procedure described above, assuming a correlation between the outcomes within each study of $r = 0.60$. In studies reporting a broadband scale for youth outcomes (for example, "Internalizing problems"), the effect for the broadband scale was used in the calculation of the overall youth outcomes summary effect size. Where a study also reported data for the specific scales making up that broadband scale, specific scale effects were not included. In studies where no broadband scale was used, but more than one youth psychological outcome was reported (for example, anxiety and depression), then these were combined to form a composite effect. For studies reporting data for only one relevant youth outcome, then the effect size for that outcome was used for that study. For the two studies that reported separate youth outcome data for two parents or a parent and another family caregiver (van de Weijer-Bergsma et al., 2012; Lewallen and Neece, 2015), a composite parent-reported effect size was calculated using a correlation of $r = 0.60$ between the two parent or caregiver outcomes. The same two studies also included data from tutor reports on some outcomes. However, for consistency with the other studies, the tutor-reported data was not included in the calculation of the youth outcomes effect for those two studies. Data from youth-reported and objective tests of youth outcomes were also not used, as most studies did not include these data. The single youth outcome effect size for each study was then combined with the others to generate a summary, parent-reported overall youth outcome effect size.

TABLE 3 | Reported results of mindfulness intervention, for youth psychological outcomes.

Study	Outcomes	Measure	Reporter	Within group results		Between group results (Pre-post)
				Pre-post	Pre-follow up^	
Bögels et al. (2008)	Mindfulness	MAAS	Youth	$d = 0.50$ (+)	$d = 0.50$ (+)	–
	Internalizing outcomes:					
	Internalizing problems	YSR	Youth	$d = 0.50$	$d = 0.50$	–
		CBCL	Parent	$d = -0.10$	$d = 0.30$	–
	Happiness	SHS	Youth	$d = 0.60$ (+)	$d = 0.60$ (+)	–
	Externalizing outcomes:					
	Externalizing problems	YSR	Youth	$d = 1.10$ (+)	$d = 1.20$ (+)	–
		CBCL	Parent	$d = 0.30$	$d = 0.40$	–
	Self-control	SCRS	Youth	$d = 0.80$ (+)	$d = 0.60$ (+)	–
	Cognitive outcomes:					
	Thought problems	YSR	Youth	$d = 0.40$	$d = 0.30$	–
		CBCL	Parent	$d = 0.00$	$d = 0.10$	–
	Attention problems	YSR	Youth	$d = 1.00$ (+)	$d = 0.90$ (+)	–
		CBCL	Parent	$d = 0.30$	$d = 0.50$	
	Sustained attention	D2 Test of Attention	Youth	$d = 0.60$ (+)	$d = 1.10$ (+)	
	Social outcomes:					
	Social problems	YSR	Youth	$d = 0.60$ (+)	$d = 0.50$ (+)	–
		CBCL	Parent	$d = 0.20$	$d = 0.30$	–
	Social behavior	CSBQ	Parent	$d = -0.10$	$d = 0.40$	–
Bögels et al. (2014)	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent	$d = 0.45$ (+)	$d = 0.47$ (+)	–
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent	$d = 0.31$ (+)	$d = 0.37$ (+)	–
De Bruin et al. (2015)	Mindfulness	MAAS – A	Youth	$d = -0.26$	$d = -0.02$	–
	Internalizing outcomes:					
	Worry	PSWQ	Youth	$d = -0.04$	$d = 0.28$	–
	Rumination	RRS	Youth	$d = 0.34$	$d = 0.92$ (+)	–
	Well-being	WHO-5	Youth	$d = 0.55$ (+)	$d = 0.63$ (+)	–
	Externalizing outcomes:					
	Autism core symptoms	AQ	Youth	$d = -0.04$	$d = 0.06$	–
			Parent	$d = 0.09$	$d = -0.15$	
	Social outcomes:					
	Social responsiveness	SRS	Parent	$d = -0.01$	$d = 0.33$	–
Haydicky et al. (2015)[a]	Internalizing outcomes:					
	Internalizing problems	RCADS	Youth	$d = 0.26$	$d = 1.01$ (+)	–
			Parent	NR	$d = 0.49$	
	Anxiety	RCADS	Youth	$d = 0.25$	$d = 1.02$ (+)	–
			Parent	NR	$d = 0.37$	
	Depression	RCADS	Youth	$d = 0.38$	$d = 0.64$ (+)	–
			Parent	NR	$d = 0.55$	
	Externalizing outcomes:					
	ODD	Conners	Youth	$d = -0.45$	$d = 0.21$	–
			Parent	NR	$d = 0.45$	
	CD	Conners	Youth	NR	$d = 0.46$	–
			Parent	$d = 0.70$ (+)	$d = 0.32$	
	Hyperactivity/impulsivity	Conners	Youth	NR	$d = 0.16$	–
			Parent	NR	$d = 0.41$	

(Continued)

TABLE 3 | Continued

Study	Outcomes	Measure	Reporter	Within group results		Between group results (Pre-post)
				Pre-post	Pre-follow up^	
	Cognitive outcomes:					
	Inattention	Conners	Youth	NR	$d = 0.12$	–
			Parent	$d = 0.62$	$d = 0.20$	
	Learning problems	Conners	Youth	NR	$d = -0.64$	–
			Parent	$d = 0.46$	$d = 0.29$	
	Executive function	Conners	Parent	$d = 0.36$	$d = 0.24$	–
	Social outcomes:					
	Peer relations	Conners	Parent	$d = 1.07$ (+)	$d = 0.02$	–
	Family relations	Conners	Youth	$d = -0.34$	$d = 0.31$	–
Jones et al. (2018)	Externalizing outcomes:					
	Behavior problems	SDQ	Parent	$d = -0.14$	–	–
	Social outcomes:					
	Prosocial behavior	SDQ	Parent	$d = 0.04$	–	–
Lo et al. (2017a)	Externalizing outcomes:					
	Behavior problems	ECBI	Parent	–	–	NR (ns)
	Behavior severity	ECBI	Parent	–	–	NR (ns)
Lo et al. (2017b)	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent	–	–	$d = 0.46$ (+)
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent	–	–	$d = 0.29$ (+)
	ADHD symptoms	SWAN	Parent	–	–	$d = 0.63$ (+)
	Executive function[b]	CANT Conflict monitoring	Youth	–	–	$d = 0.41$ (+)
Mann et al. (2016)	Externalizing outcomes:					
	Behavior problems	SDQ	Parent	–	–	$d = 0.60$ (+) (4 mo.)
Meppelink et al. (2016)	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent	$d = 0.34$ (+)	$d = 0.31$ (+)	–
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent	$d = 0.22$ (+)	$d = 0.37$ (+)	–
	Cognitive outcomes:					
	Attention problems	CBCL	Parent	$d = 0.26$ (+)	$d = 0.42$ (+)	–
Neece (2014) [including Lewallen and Neece (2015); Xu (2017); Chan and Neece (2018)]	Internalizing outcomes:					
	Internalizing problems	CBCL	Parent	–	–	$d = -0.13$
	Emotional reactivity	CBCL	Parent	–	–	$d = -0.31$
	Anxious/depressed	CBCL	Parent	–	–	$d = -0.25$
	Somatic complaints	CBCL	Parent	–	–	$d = 0.24$
	Withdrawn/depressed	CBCL	Parent	–	–	$d = -0.04$
	Sleep problems	CBCL	Parent	–	–	$d = 0.28$
	DSM Affective problems	CBCL	Parent	–	–	$d = 0.57$
	DSM Anxiety problems	CBCL	Parent	–	–	$d = -0.20$
	Emotion dysregulation[c]	DCS	Observer	$\beta = 0.27$, $sr^2 = 0.06$	–	–
	Emotion regulation[d]	ERC	Parent	$d = 0.12$	–	–
	Externalizing outcomes:					
	Externalizing problems	CBCL	Parent	–	–	$d = 0.45$
	Aggressive behavior	CBCL	Parent	–	–	$d = 0.30$
	DSM ADHD problems	CBCL	Parent	–	–	$d = 0.85$ (+)
	DSM ODD	CBCL	Parent	–	–	$d = 0.20$

(Continued)

TABLE 3 | Continued

Study	Outcomes	Measure	Reporter	Within group results		Between group results (Pre-post)
				Pre-post	Pre-follow up^	
	Cognitive outcomes:					
	Attention problems	CBCL	Parent	–	–	$d = 0.71$
	DSM Developmental problems	CBCL	Parent	–	–	$d = 0.17$
	Social outcomes[e]:	SSIS				
	Self-control		Parent	$d = 0.54$ (+)	–	–
			Secondary Informant	$d = 0.36$ (+)		
			Teacher	$d = 0.59$ (+)		
	Communication		Parent	$d = 0.03$	–	–
			Secondary Informant	$d = 0.10$		
			Teacher	$d = 0.75$ (+)		
	Cooperation		Parent	$d = -0.03$	–	–
			Secondary Informant	$d = 0.12$		
			Teacher	$d = 0.83$ (+)		
	Assertion		Parent	$d = -0.24$	–	–
			Secondary Informant	$d = 0.74$ (+)		
			Teacher	$d = 0.48$ (+)		
	Responsibility		Parent	$d = 0.18$	–	–
			Secondary Informant	$d = 0.19$		
			Teacher	$d = 0.58$ (+)		
	Empathy		Parent	$d = 0.61$ (+)	–	–
			Secondary Informant	$d = 0.27$		
			Teacher	$d = 0.58$ (+)		
	Engagement		Parent	$d = 0.61$ (+)	–	–
			Secondary Informant	$d = 0.19$		
			Teacher	$d = 0.82$ (+)		
Potharst et al. (2017)	Internalizing outcomes:					
	Positive affect	IBQ-R	Parent	$d = 0.48$ (+)	$d = 0.51$ (+)	–
	Regulating	IBQ-R	Parent	$d = 0.35$	$d = 0.06$	–
	Negative emotionality	IBQ-R	Parent	$d = 0.25$	$d = 0.19$	–
Potharst et al. (2018)	Internalizing outcomes:					
	Well-being	WHO-5	Parent	$d = 0.30$ (+)	$d = 0.11$	–
	Externalizing outcomes:					
	Behavior problems	SDQ	Parent	$d = 0.61$ (+)	$d = 0.41$ (+)	–
Racey et al. (2017)	Internalizing outcomes:					
	Depression	BDI-II	Youth	NR (+)[f]	–	–
	Rumination	RRS	Youth	NR (+)[f]	–	–
	Self–compassion	SCS	Youth	NR (+)[f]	–	–
	De-centring	EQD	Youth	NR (+)[f]	–	–
Ridderinkhof et al. (2017)	Mindfulness	CAMM[g]	Youth	$d = 0.02$	$d = 0.37$; $d = 0.01$ (1 yr.)	
	Internalizing outcomes:					
	Internalizing problems	YSR[g]	Youth	$d = 0.13$	$d = 0.50$; $d = 0.59$ (1 yr.)	–
		CBCL	Parent	$d = 0.35$ (+)	$d = 0.38$ (+); $d = 0.63$ (+) (1 yr.)	–
	Rumination	RRS[g]	Youth	$d = 0.44$ (+)	$d = 0.71$ (+); $d = -0.27$ (1 yr.)	–
	Stress	CSQ-CA	Youth	$d = 0.20$	$d = 0.63$ (+); $d = 0.25$ (1 yr.)	–
	Sleep problems	CSRQ	Youth	$d = 0.06$	$d = 0.28$; $d = 0.12$ (1 yr.)	–
	Well-being	WHO-5	Youth	$d = 0.35$	$d = 0.40$; $d = 0.46$ (+) (1 yr.)	–

(Continued)

TABLE 3 | Continued

Study	Outcomes	Measure	Reporter	Within group results		Between group results (Pre-post)
				Pre-post	Pre-follow up^	
	Externalizing outcomes:					
	Externalizing problems	YSR[g]	Youth	$d = 0.20$	$d = 0.56$ (+); $d = 0.61$ (+) (1 yr.)	–
		CBCL	Parent	d = 0.21 (+)	d = 0.43 (+); d = 0.42 (+) (1 yr.)	–
	Cognitive outcomes:					
	Attention problems	YSR[g]	Youth	$d = 0.22$	$d = 0.57$ (+); $d = 0.68$ (+) (1 yr.)	–
		CBCL	Parent	$d = 0.32$ (+)	$d = 0.44$ (+); $d = 0.58$ (+) (1 yr.)	–
	Social outcomes:					
	Social responsiveness	SRS	Parent	$d = 0.32$ (+)	$d = 0.33$ (+); $d = 0.51$ (+) (1 yr.)	–
van der Oord et al. (2012)	Externalizing outcomes:					
	Inattention	DBDRS	Parent	$d = 0.80$ (+)	$d = 0.80$ (+)	–
			Teacher	NR (ns)	NR (ns)	
	Hyperactivity	DBDRS	Parent	$d = 0.56$ (+)	$d = 0.59$ (+)	–
			Teacher	NR (ns)	NR (ns)	
	ODD	DBDRS	Parent	NR (ns)	NR (ns)	–
			Teacher	NR (ns)	NR (ns)	
van de Weijer-Bergsma et al. (2012)	Mindfulness	MAAS	Youth	$d = 0.10$	$d = -0.10$; $d = 0.50$ (16 wks.)	–
	Internalizing outcomes:					
	Internalizing problems	YSR	Youth	$d = 0.10$	$d = 0.20$; $d = 0.70$ (16 wks.)	–
		CBCL	Mother	$d = 0.10$	$d = 0.00$	–
			Father	$d = 0.40$	$d = 0.50$	
			Teacher	$d = 0.20$	–	
	Fatigue	FFS	Youth	$d = 0.00$	$d = 0.20$; $d = -0.10$ (16 wks.)	–
	Happiness	SHS	Youth	$d = -0.50$	$d = -0.40$; $d = -0.20$ (16 wks.)	–
	Externalizing outcomes:					
	Externalizing problems	YSR	Youth	$d = -0.10$	$d = 0.50$; $d = 0.90$ (16 wks.)	–
		CBCL	Mother	$d = -0.21$	$d = 0.10$	–
			Father	$d = 0.20$ (+)	$d = 0.30$ (+)	
			Teacher	$d = 0.20$	–	
	Cognitive outcomes:					
	Attention problems	YSR	Youth	$d = 0.50$	$d = 0.90$ (+); $d = 1.0$ (16 wks.)	–
		CBCL	Mother	$d = 0.10$	$d = 0.30$	–
			Father	$d = 0.60$	$d = 1.50$ (+)	
			Teacher	$d = 0.30$	–	
	Metacognitive problems	BRIEF	Mother	$d = -0.30$	$d = 0.00$	–
			Father	$d = 1.00$	$d = 1.80$ (+)	
			Teacher	$d = 0.20$	–	
	Behavior regulation problems	BRIEF	Mother	$d = -0.20$	$d = 0.10$	–
			Father	$d = 0.10$	$d = 0.60$ (+)	
			Teacher	$d = -0.50$	–	
	Reaction time	ANT	Youth	$d = -0.20$	$d = -0.10$; $d = -0.70$ (16 wks.)	
	Sustained attention[h]	ANT	Youth	$d = 0.20$ to $d = 0.40$	$d = 0.80$ (+); $d = 0.40$ to $d = 0.50$ (16 wks.)	
	Impulsivity[i]	ANT	Youth	$d = 0.00$ to $d = 0.50$ (+)	$d = 0.30$ to $d = 0.70$; $d = 0.10$ to $d = 0.70$ (16 wks.)	
Zhang et al. (2017)	Externalizing outcomes:					
	Behavior problems	ECBI	Parent	$d = 0.25$	–	–
	Behavior severity	ECBI	Parent	$d = 0.36$ (+)	–	–

(Continued)

TABLE 3 | Continued

Study	Outcomes	Measure	Reporter	Within group results		Between group results (Pre-post)
				Pre-post	Pre-follow up^	
	Cognitive outcomes:					
	Metacognitive problems	BRIEF	Parent	$d = 0.00$	–	–
	Behavior regulation problems	BRIEF	Parent	$d = 0.01$	–	–
	Sustained attention[j]	Tea–CH	Youth	$d = -0.24$ to $d = 0.76$	–	–
	Selective/focussed attention[k]	Tea-CH	Youth	$d = 0.80$ to $d = 1.53$ (+)	–	–
	Attentional control/switching[l]	Tea-CH	Youth	$d = -0.16$ to $d = 0.81$	–	–
	Inattention[m]	CCPT	Youth	$d = -0.43$ to $d = 2.29$ (+)	–	–
	Impulsivity[n]	CCPT	Youth	$d = -0.73$ to $d = 0.81$	–	–
	Vigilance[o]	CCPT	Youth	$d = -0.13$	–	–
	Sustained attention[p]	CCPT	Youth	$d = 0.28$	–	–

For within-group results, effect size is reported as a positive number if there was an improvement in the outcome, and as a negative number if there was a deterioration. For between-group results, effect size is reported as a positive number if the outcome improved more in the mindfulness group than the control group; + indicates effect size is significant, $p < 0.05$; ^, 8 week follow up, unless otherwise indicated; NR, not reported by study authors; ns, not significant; [a] the follow-up effects reported by Haydicky et al. (2015) are post-follow up; [b] only the conflict monitoring effect is included, as effects for alerting, orienting, response time, and accuracy were reported only as non-significant; [c] Emotion dysregulation effect is reported in Chan and Neece (2018); [d] Emotion regulation is reported in Xu (2017); [e] Social skills are reported in Lewallen and Neece (2015); [f] d not reported, but mean change reported as significant; [g] these measures were only completed by adolescents ≥11years; [h] Sustained attention measured by "misses" measures of Amsterdam Neuropsychological Tasks (ANT; De Sonneville, 1999); [i] Impulsivity measured by "false alarms" measures of ANT; [j] Sustained attention measured by Score!, Sky Search DT, Walk Do Not Walk, and Code Transmission subtests of the Test of Everyday Attention for Children (Tea-CH; Manly et al., 2001); [k] Selective/focussed attention measured by Sky Search and Map Mission subtests of Tea-CH; [l] Attentional control/switching measured by Creature Counting and Opposite Worlds subtests of Tea-CH; [m] Inattention measured by detectability, omissions, commissions, Hit reaction time (HRT) statistics, and variability measures in Conners' Continuous Performance Test, 3rd edition (CCPT; Conners, 2015); [n] Impulsivity measured by commissions, perseverations, and HRT measures of CCPT; [o] Vigilance measured by HRT block change measure of CCPT; [p] Sustained attention measured by HRT block change measure of CCPT; MAAS, Mindful Attention and Awareness Scale (Brown and Ryan, 2003); YSR, Youth Self-Report (Achenbach, 1991a); CBCL, Child Behavior Checklist (Achenbach, 1991b); SHS, Subjective Happiness Scale (Lyubomirsky and Lepper, 1999); SCRS, Self Control Rating Scale (Kendall, 1979); CSBQ, Children's Social Behavior Questionnaire (Luteijn et al., 2000); MAAS-A, Mindful Attention and Awareness Scale–Adolescent (Brown et al., 2011); PSWQ, Penn State Worry Questionnaire (Meyer et al., 1990); Ruminative Response Scale (Nolen-Hoeksema, 2000); WHO-5, World Health Organization-Five Wellbeing Index (Bech et al., 2003); SRS, Social Responsiveness Scale (Constantino and Gruber, 2005); AQ, Autism Questionnaire (Auyeung et al., 2008); RCADS, Revised Child Anxiety and Depression Scale (Chorpita et al., 2000); Conners, Conners 3rd Edition (Conners, 2008); SDQ, Strengths and Difficulties Questionnaire (Goodman, 1997); ECBI, Eyberg Child Behavior Inventory (Robinson et al., 1980); SWAN, Strengths and Weaknesses of ADHD Symptoms and Normal Behaviors Rating Scale (Swanson et al., 2012); CANT, Child Attention Network Test (Posner and Petersen, 1990); DCS, Dysregulation Coding System (Hoffman et al., 2006); ERC, Emotion Regulation Checklist (Shields and Cicchetti, 1997); SSIS, Social Skills Improvement System (Gresham and Elliott, 2008); IBQ-R, Infant Behavior Questionnaire-Revised, Very Short Form (Putnam et al., 2014); BDI-II, Beck Depression Inventory (Beck et al., 1996); SCS, Self Compassion Scale (Neff, 2015); EQD, Experiences Questionnaire (Fresco et al., 2007), Decentring subscale; CAMM, Children's Acceptance and Awareness Measure (De Bruin et al., 2013); CSQ-CA, Chronic Stress Questionnaire for Children and Adolescents (De Bruin et al., 2017); CSRQ, Chronic Sleep Reduction Questionnaire (Meijer, 2008); DBDRS, Disruptive Behavior Disorder Rating Scale (Pelham et al., 1992); FFS, Flinders Fatigue Scale (Gradisar et al., 2007); BRIEF, Behavior Rating Inventory of Executive Function (Goia et al., 2000).

Exploratory moderator analyses were conducted in relation to both parenting stress and overall youth outcomes. For potential categorical moderators, a mixed effects model was used (random-effects within subgroups and fixed-effects across subgroups). The variance of true effect sizes across studies (T^2) was estimated by pooling within-group estimates of T^2 for each subgroup and applying the common estimate to all studies. This method of estimating T^2 is recommended by Borenstein et al. (2009) to increase the accuracy of the estimate, when the number of studies within any subgroup is low. Categorical moderators were tested only when there were four or more studies per subgroup (Fu et al., 2011). To test significance, the Q statistic was calculated between subgroups (Q_B). Random-effects meta-regression analyses were used to investigate the relationship between parent or youth outcomes and potential continuous moderators.

Risk of Bias in Individual Studies

A risk of bias assessment was conducted for each included study. Bias is defined as the tendency for study results to vary from those that would have been obtained from a well-designed and run RCT on the same participant group (Sterne et al., 2016). The domains assessed for potential bias were confounding (for non-randomized studies only), selection, misclassification, performance, attrition, detection and reporting bias. For RCTs, the Cochrane Risk of Bias tool for Randomized Controlled Trials (Higgins et al., 2011) was used to assess selection bias. However, for all other domains, the Cochrane Risk of Bias in Non-randomized Studies of Interventions (ROBINS-I) tool (Sterne et al., 2016) was used, as that tool appeared more suited to assessing studies of psychological interventions where blinding of participants, researchers and outcome assessments are not possible. For the non-randomized studies, the ROBINS-I tool was

used to assess all domains. All included studies were assessed for potential bias independently by both the first author and the graduate student who assisted with study selection. There was 94% agreement in bias ratings, with differences resolved by discussion.

RESULTS

Study Selection

Figure 1 shows the process of study selection and exclusion. The database searches identified 2,628 studies, 928 of which were duplicates. Forty-seven studies were retained after the title and abstract screening. Twenty-three of these studies were excluded based on the full text review, for the reasons set out in **Figure 1**. Of the 24 retained studies, three studies (Neece, 2014; Lewallen and Neece, 2015; Xu, 2017) appeared to be reporting data from an overlapping participant group. Confirmation was sought by email from the corresponding author but was not received. Lewallen and Neece (2015) and Xu (2017) reported on relevant outcomes that were not included in Neece (2014), but the outcome data for these two studies are reported in **Table 3** under Neece (2014), to reflect the apparent non-independence of the outcomes reported in these two studies. When the initial search conducted in August 2018 was updated in October 2018, five additional studies were identified by the first author. Two of these, Chan and Neece (2018) and Neece et al. (2018), also appeared to report data from a group of participants overlapping with those used in Neece (2014). As these two new studies and Neece (2014) all reported on parenting stress, the parenting stress outcomes from Chan and Neece (2018) and Neece et al. (2018) were not included in this review. The child outcome reported by Chan and Neece (2018) was not included in Neece (2014), so this child outcome is reported in **Table 3**, also under Neece (2014). However, the child outcomes reported in Neece et al. (2018) were also reported in Neece (2014), so this study was not included in this review. Accordingly, 25 independent studies are included in this review.

Study Characteristics

Twenty-five independent studies reported on the effects of a mindfulness intervention for parents. Eighteen studies delivered mindful parenting interventions, five studies delivered MBSR or Mindfulness-based Cognitive Therapy (MBCT) interventions specifically adapted for parents, and four studies (which appeared to use overlapping participant groups) delivered MBSR to parents. Where adaptations were made to standard MBSR or MBCT programs to reflect the fact that the participants were parents, these adaptations were minor. For example, trainers encouraged participants to reflect on how key concepts of mindfulness, such as acceptance and non-reactivity, might apply to their interactions with their children.

All studies delivered the intervention in a group format. Sixteen studies delivered the intervention to parents (including one mother/infant group), while nine delivered parallel mindfulness training to both parents and their children (parents and children in separate groups). In all studies, the majority of participating parents (between 55 and 100%) were mothers. In relation to parental mental health, four studies involved parents referred for mental health treatment for their own mental health condition or parenting difficulties, while another six studies involved parents identified as being vulnerable to mental health difficulties due to socio-demographic factors or past psychiatric history, or who self-reported experiencing parenting stress. The remaining studies did not report on parental mental health status. In relation to youth mental health, the children of participating parents were identified as having mental health diagnoses or difficulties in 20 of the 25 studies. The mean age of children of participating parents ranged from 0.86 to 16.4 years, and 16 studies involved parents with children whose mean age was <12 years.

Sample sizes ranged from 11 to 180 participants. Of the 25 independent studies, 18 utilized a single group design and seven used a control group. Of the controlled trials, six were RCTs. Two RCTs used an active control group (skills-based parent training and parent education), while the remainder used passive controls such as waitlist or usual care groups. Individual session length ranged from 1.5 h (ten studies) to 3 h (three studies). Eight of the ten studies that delivered parallel parent and child interventions used the shorter 1.5 h sessions. The interventions were delivered over 6–12 weeks, and involved total hours of training between 9 and 27 h.

Parenting Stress

Within-Group Differences

Nineteen studies reported data enabling a quantitative analysis of within-group parenting stress. **Figure 2** shows the effect sizes for pre- to post-intervention change in parenting stress, with a summary Hedges' $g = 0.34$ ($p < 0.001$, 95% CI [0.23–0.45]). Heterogeneity was moderate to high ($Q = 66.96$, $p = < 0.001$, $I^2 = 70\%$). **Figure 2** reports composite mother/father data for all studies where mothers and fathers participated. In the one study that reported mother and father outcomes separately, the authors found a significant, moderate to large reduction in parenting stress for fathers and a moderate but insignificant increase for mothers (van de Weijer-Bergsma et al., 2012). At first follow-up, which was generally 2 months post-intervention, the summary effect size for change in parenting stress was $g = 0.53$ ($p < 0.001$, 95% CI [0.45–0.61]) and heterogeneity was low ($Q = 6.62$, $p = 0.76$, $I^2 = 0\%$). The difference between pre-post and pre-follow up effect sizes was significant ($Q_B = 7.32$, $df = 1$, $p = 0.007$). Two studies also reported a 1-year post-intervention follow up. While no quantitative analysis was conducted for this time-point, the reported small to moderate reductions in parenting stress from pre-intervention remained significant [$d = 0.53$ in Potharst et al. (2017) and $d = 0.28$ in Ridderinkhof et al. (2017)].

Moderator analyses were conducted in relation to youth clinical status (clinical vs. non-clinical), youth age (child under 12 years vs. adolescent 12 years and over), and intervention groups (parent only mindfulness group vs. parallel parent and youth mindfulness groups). There were insufficient studies to conduct this analysis in respect of parent clinical status. No significant difference was found between the parenting stress effect sizes for parents attending a mindfulness program based on youth clinical status ($g = 0.33$, $p < 0.001$, 95% CI [0.19–0.48] for clinical youth

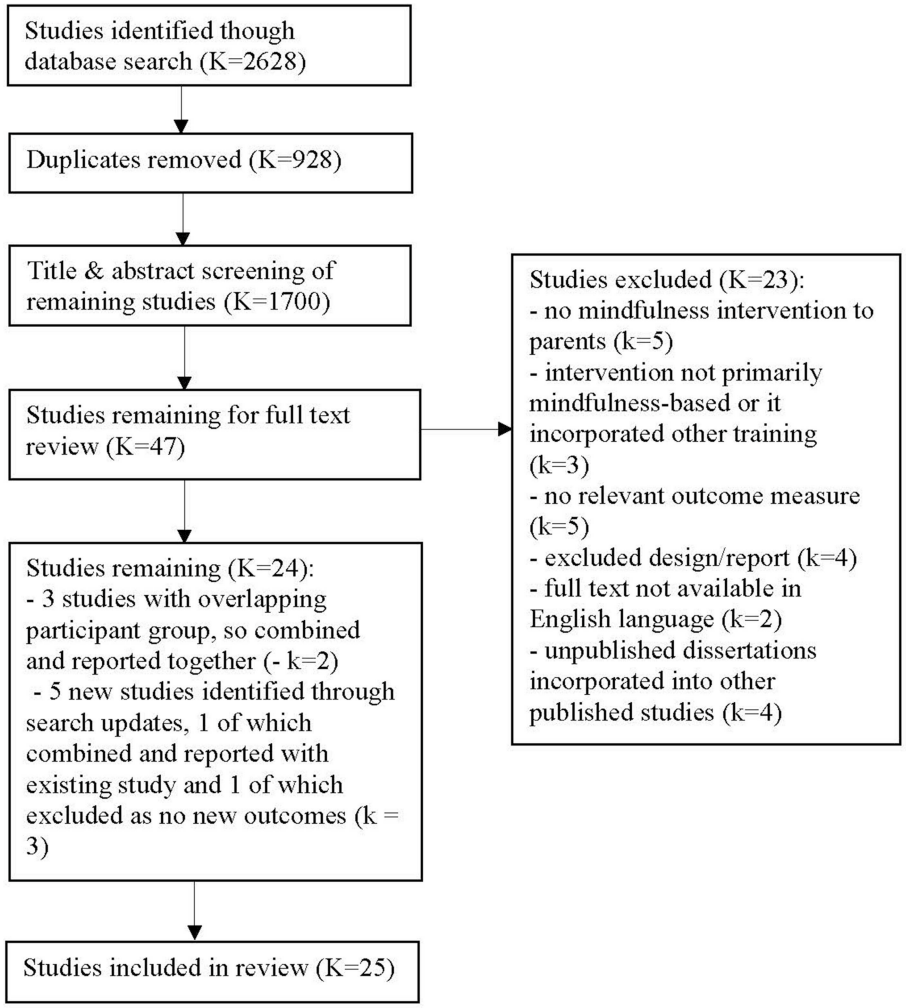


FIGURE 1 | Flow diagram showing process of study selection.

and $g = 0.35$, $p < 0.001$, 95% CI [0.16–0.53] for non-clinical youth; $Q_B = 0.01$, $df = 1$, $p = 0.906$). Similarly, there was no difference in effects between parents of children ($g = 0.31$, $p < 0.001$, 95% CI [0.21–0.42]) and adolescents ($g = 0.21$, $p = 0.005$, 95% CI [0.06–0.35]) ($Q_B = 1.33$, $df = 1$, $p = 0.248$). However, the effect size for studies using parent-only intervention groups ($g = 0.35$, $p < 0.001$, 95% CI [0.24–0.46]) was greater than that for studies using parallel intervention groups ($g = 0.18$, $p = 0.001$, 95% CI [0.07–0.29]) ($Q_B = 4.37$, $df = 1$, $p = 0.036$). A meta-regression of total intervention hours on parenting stress effect size provided no evidence of a dose-response relationship between total hours spent in the mindfulness intervention and parenting stress ($\beta = 0.01$, $SE = 0.01$, $p = 0.26$).

Parenting stress was assessed by all studies as an outcome variable rather than as a potential mediator in the relationship between mindfulness in parenting and youth outcomes. One study (Haydicky et al., 2015) examined the direction of relationship between mindful parenting and parenting stress, by using cross-lagged panel correlations. Pre-test mindful parenting scores were significantly negatively correlated with post-test parenting stress [$r_{(14)} = -0.52$, $p = 0.02$], but pre-test parenting stress was not significantly correlated with post-test mindful parenting [$r_{(14)} = -0.13$, $p = 0.311$].

Between-Group Differences

Five studies reported data enabling a comparison of post-intervention differences in parenting stress between mindfulness and control groups. The summary effect for the difference between these two groups indicated that the mindfulness groups experienced larger reductions in parenting stress than the control groups. This difference was of a small to moderate size ($g = 0.44$, $p = 0.005$, 95% CI [0.13–0.74]), with moderate heterogeneity ($Q = 8.11$, $p = 0.087$, $I^2 = 51\%$). Of these controlled studies, two compared a mindful parenting intervention with another active intervention. Ferraioli and Harris (2013) reported that mindful parenting resulted in a larger reduction in parenting stress than skills-based parent training ($d = 1.59$). Chaplin et al. (2018) reported that mindful parenting outperformed

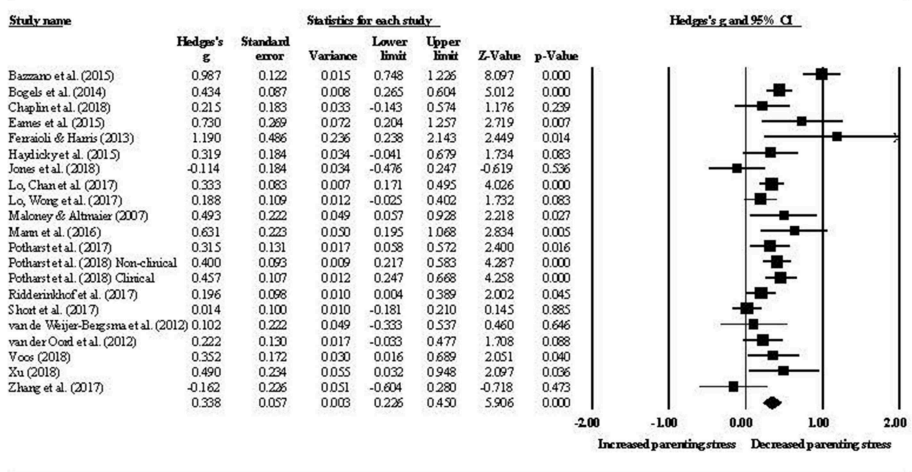


FIGURE 2 | Pre- to post-intervention change in parenting stress.

parent education, in two out of the three parenting stress domains measured ($d = 0.53$ and $d = 0.59$). Although not specifically about parenting stress, one study measured parents' heart rate variability and reported an effect of $d = 0.00$ for the comparison between the mindfulness and control groups (Lo et al., 2017b).

Youth Psychological Outcomes

Within-Group Differences

The summary effect sizes for the youth internalizing, externalizing, cognitive, and social domains are presented in **Table 4**. Post-intervention effect sizes for each domain were small, and all were maintained at 2-month follow-up.

Figure 3 shows the effect sizes for overall youth outcomes. The summary effect size was $g = 0.27$ ($p < 0.001$, 95% CI [0.21–0.33]), with low to moderate heterogeneity ($Q = 23.06$, $p = 0.147$, $I^2 = 26\%$). At 2-month follow-up, the summary effect was $g = 0.35$ ($p < 0.001$, 95% CI [0.27–0.42]), with low heterogeneity ($Q = 10.45$, $p = 0.402$, $I^2 = 4\%$). There was no difference between pre-post and pre-follow up effects ($Q_B = 2.53$, $df = 1$, $p = 0.112$).

Despite the relatively low level of heterogeneity in youth outcome effects, moderator analyses were conducted in respect of youth age (child vs. adolescent) and intervention groups (parent only vs. parallel parent and youth groups). There were insufficient studies to conduct this analysis in respect of parent or youth clinical status. No differences were found in overall youth outcome effect sizes for children ($g = 0.26$, $p < 0.001$, 95% CI [0.20–0.33]) and adolescents ($g = 0.30$, $p = 0.001$, 95% CI [0.13–0.48]) ($Q_B = 0.17$, $df = 1$, $p = 0.682$) or for studies using parent only interventions ($g = 0.26$, $p < 0.001$, 95% CI [0.18–0.33]) and studies using parallel parent and youth interventions ($g = 0.31$, $p < 0.001$, 95% CI [0.21–0.41]) ($Q_B = 0.71$, $df = 1$, $p = 0.399$).

A meta-regression of total intervention hours on overall youth outcomes was conducted, but no evidence was found of a relationship between these two variables ($\beta = 0.00$, $SE = 0.00$, $p = 0.844$). For those studies reporting both parenting stress and youth outcome data, a series of meta-regressions were conducted to examine whether change in parenting stress predicted youth outcome effect sizes. Change in parenting stress predicted change in both youth externalizing ($\beta = 0.48$, $SE = 0.21$, $p = 0.02$) and cognitive outcomes ($\beta = 1.13$, $SE = 0.56$, $p = 0.046$), but not internalizing outcomes ($\beta = -0.32$, $SE = 0.30$, $p = 0.282$). The same analysis was not performed for the social domain as there were too few studies. **Figures 4**, **5** show the relationships between change in parenting stress and externalizing outcomes, and change in parenting stress and internalizing outcomes, respectively.

Insufficient data was available for a quantitative analysis of youth mindfulness, but the effects reported by five studies for this variable (see **Table 3**) ranged from $d = -0.26$ to $d = 0.50$. A small number of studies included objective measures of youth outcomes, such as attention tests. In two studies, the effects obtained in the attention tests were broadly in line with those obtained from self-reports. For example, in Bögels et al. (2008), the youth-reported effect for attention problems was $d = 1.00$, then $d = 0.90$ at follow up, while the effect reported based on the D2 Attention Test was $d = 0.60$, rising to $d = 1.10$ at follow up. Similarly, in van de Weijer-Bergsma et al. (2012), the youth-reported effect for attention problems was $d = 0.50$, while the computerized sustained attention task effects ranged between $d = 0.20$ and $d = 0.40$. In Zhang et al. (2017), the effects reported for several aspects of attention were variable. For example, the effects in various subtests of sustained attention ranged from $d = -0.24$ to $d = 0.76$.

Only one study reported mother and father data on youth outcomes separately (van de Weijer-Bergsma et al., 2012), and two studies obtained teacher reports of youth outcomes (Lewallen and Neece, 2015, reported in **Table 3** under Neece, 2014; van de Weijer-Bergsma et al., 2012). Teacher-reported effects were similar to parent-reported effects in van de Weijer-Bergsma et al. However, in Lewallen and Neece, teachers reported significant improvements in all seven of the social domains

TABLE 4 | Within-group effects for four youth outcome domains.

Outcome domain	Point of assessment	Sample		Effect size			Heterogeneity	
		K	*n*	Hedges' *g*	*p*-value	95% CI	I^2	*p*-value
Internalizing	Post-intervention	12	438	0.29	<0.001	0.21–0.36	22%	0.229
	Follow-up#	9	397	0.33	<0.001	0.22–0.44	46%	0.065
Externalizing	Post-intervention	14	621	0.26	<0.001	0.18–0.34	37%	0.079
	Follow-up	10	414	0.39	<0.001	0.31–0.47	7%	0.379
Cognitive	Post-intervention	7	231	0.27	0.001	0.11–0.42	52%	0.051
	Follow-up	5	144	0.40	<0.001	0.24–0.55	24%	0.263
Social^	Post-intervention	5	158	0.28	<0.001	0.14–0.43	25%	0.254

K, number of studies included in the effect size calculation; n, total number of participants in the studies included in the relevant domain; #, all follow up assessments are 2 months post-intervention, except for one study included in the Externalizing domain, which conducted follow-up 4 months post-intervention; ^, follow-up data were not analyzed for the Social outcomes domain, as only three studies reported follow-up social outcome data.

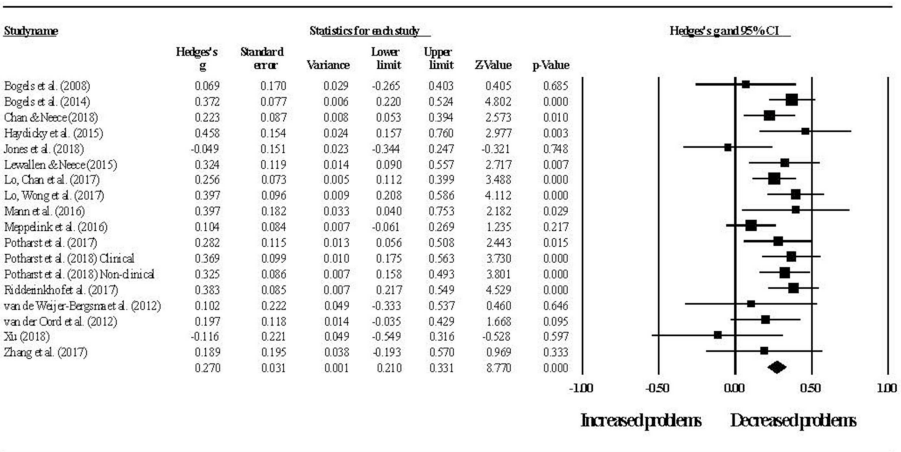


FIGURE 3 | Pre- to post-intervention change in overall youth outcomes.

measured, whereas parents reported significant improvements in only three domains.

Between-Group Differences

No quantitative comparison of the effectiveness of mindfulness interventions to control groups for youth outcomes was performed, as data required for this analysis was only available for three studies. However, of the studies that reported a between-group effect, the mindfulness group outperformed wait list for externalizing problems in two out of five studies [$d = 0.29$ in Lo et al. (2017b) and $d = 0.60$ in Mann et al. (2016)] and for internalizing problems in one out of three studies [$d = 0.46$ in Lo et al. (2017b)]. There were no studies comparing mindfulness with an active control, for youth psychological outcomes.

Publication Bias

To assess the impact of any publication bias on the observed effects in this review, the trim and fill method (Duval and Tweedie, 2000) was used to give unbiased estimates of effect size. For within-group parenting stress, the imputed summary effect size was $g = 0.33$, which was equal to the observed summary effect size of $g = 0.33$. As shown in **Figure 6**, the trim and fill analysis indicated that no studies were required to be trimmed in order for the funnel plot to be symmetric, that is for the impact of any publication bias to be removed. In relation to between-group parenting stress, the trim and fill analysis produced an imputed summary effect size of $g = 0.32$ (compared to the observed $g = 0.35$), with one study needing to fall on the left of the summary effect for plot symmetry. The impact of any publication bias in relation to parenting stress effects appears likely to be trivial.

For within-group overall youth outcomes, the funnel plot at **Figure 7** shows that one study would need to fall on the right side of the observed summary effect for plot symmetry. The imputed effect size was $g = 0.281$ (compared to the observed $g = 0.276$), again suggesting a trivial impact of publication bias.

Assessment of Study Quality

Table 5 contains risk of bias assessments for each reviewed study. Overall, risk of bias was serious. For the non-randomized intervention studies, this was largely driven by the serious risk of confounding bias, which ROBINS-I notes may occur if

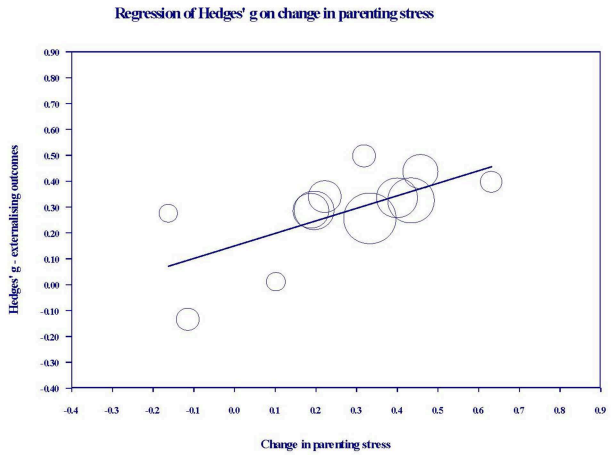


FIGURE 4 | Bubble plot of youth externalizing outcome effects against change in parenting stress. Each bubble represents a study, and the diameter of each bubble is proportional to the study weight.

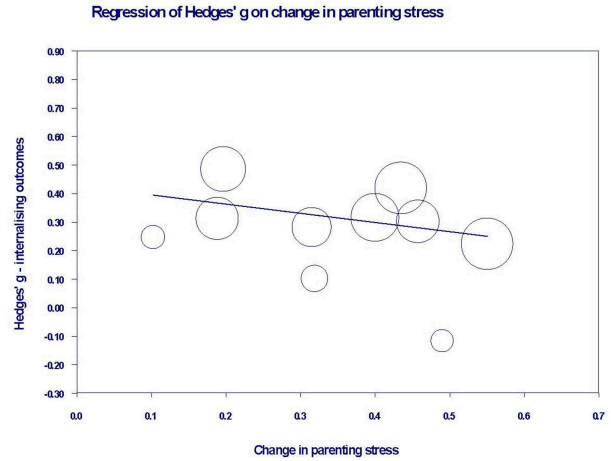


FIGURE 5 | Bubble plot of youth internalizing outcome effects against change in parenting stress. Each bubble represents a study, and the diameter of each bubble is proportional to the study weight.

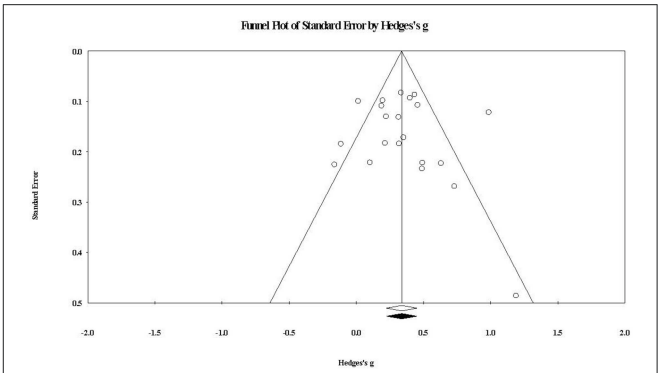


FIGURE 6 | Funnel plot of standard error by within-group parenting stress effect sizes. The white diamond represents the observed summary effect size, while the black diamond represents the imputed summary effect size free of publication bias.

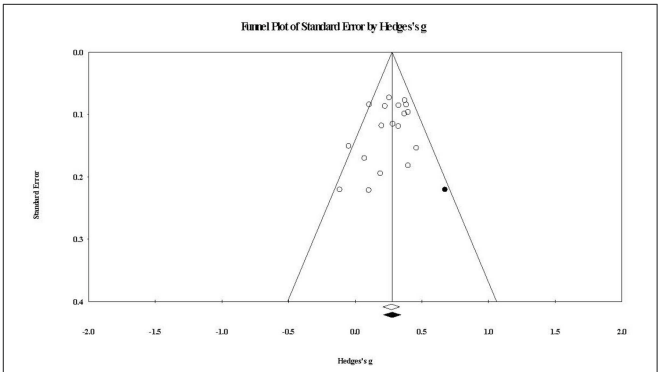


FIGURE 7 | Funnel plot of standard error by within-group overall youth outcomes effect sizes. The black circle represents the effect size of the imputed study that would be required to remove publication bias. The white diamond represents the observed summary effect size, while the black diamond represents the imputed summary effect size free of publication bias.

any prognostic variable also predicts the intervention received by a participant. Due to the lack of randomization, it is considered likely to be an issue for most if not all non-randomized studies (Sterne et al., 2016). For both non-randomized studies and RCTs, the majority of studies were considered at serious risk of detection bias because of the reliance on subjective self- or parent-about-youth outcome reports, which are considered reasonably vulnerable to the influence of knowledge about the intervention. Bias due to potential misclassification was an issue in many studies, as most reports did not state their pre-intervention position as to the minimum number of sessions a participant would need to attend to be considered as having completed the intervention. Bias may be introduced if the minimum number of sessions was changed after the study commenced. Many studies also reported limited information regarding items such as session attendance rates of treatment completers, homework completion and instructor training, making it difficult to properly assess the risk of performance bias.

DISCUSSION

This review examined 25 independent studies of mindfulness interventions delivered to parents. We systematically evaluated the effectiveness of these interventions in reducing parenting stress and improving youth psychological outcomes. The results of the review show that mindfulness interventions for parents are associated with small to moderate immediate and maintained reductions in parenting stress. Reductions in parenting stress are greater for parents who attend mindfulness intervention groups than for those who attend control groups. Results also show that mindfulness interventions for parents are associated with small immediate and maintained improvements

TABLE 5 | Risk of bias assessment for reviewed studies.

Study	Confounding bias[a]	Selection bias[b]	Misclassification bias	Performance bias	Attrition bias	Detection bias	Reporting bias
Bazzano et al. (2015)	Serious	Low	Moderate	Unclear	Low	Serious	Moderate
Bögels et al. (2008)	Serious	Low	Moderate	Low	Low	Serious	Moderate
Bögels et al. (2014)	Serious	Low	Moderate	Low	Low	Serious	Moderate
Corthorn (2018)	Serious	Low	Unclear	Unclear	Moderate	Serious	Moderate
Chan and Neece (2018)[#]	–	Low	Unclear	Low	Low	Serious	Moderate
Chaplin et al. (2018)[#]	–	Unclear	Unclear	Unclear	Low	Serious	Moderate
De Bruin et al. (2015)	Serious	Low	Unclear	Low	Low	Serious	Moderate
Eames et al. (2015)	Serious	Low	Low	Unclear	Serious	Serious	Moderate
Ferraioli and Harris (2013)[#]	-	Unclear	Unclear	Low	Moderate	Serious	Moderate
Haydicky et al. (2015)	Serious	Low	Moderate	Low	Moderate	Serious	Moderate
Jones et al. (2018)	Serious	Low	Unclear	Unclear	Moderate	Serious	Moderate
Lewallen and Neece (2015)	Serious	Low	Unclear	Unclear	Moderate	Moderate	Moderate
Lo et al. (2017a)[#]	–	Unclear	Unclear	Low	Low	Serious	Moderate
Lo et al. (2017b)[#]	–	Low	Unclear	Low	Low	Moderate	Low
Maloney and Altmaier (2007)	Serious	Low	Unclear	Unclear	Unclear	Serious	Critical
Mann et al. (2016)[#]	–	Low	Moderate	Low	Moderate	Serious	Low
Meppelink et al. (2016)	Serious	Low	Unclear	Unclear	Moderate	Serious	Moderate
Neece (2014)[#]	–	Low	Unclear	Low	Low	Serious	Moderate
Potharst et al. (2017)	Serious	Low	Unclear	Low	Moderate	Serious	Moderate
Potharst et al. (2018)	Serious	Low	Moderate	Low	Moderate	Serious	Moderate
Racey et al. (2017)	Serious	Low	Moderate	Moderate	Critical	Critical	Moderate
Ridderinkhof et al. (2017)	Serious	Low	Unclear	Moderate	Moderate	Serious	Moderate
Short et al. (2017)	Serious	Low	Unclear	Moderate	Low	Serious	Moderate
van de Weijer-Bergsma et al. (2012)	Serious	Low	Unclear	Low	Moderate	Moderate	Serious
van der Oord et al. (2012)	Serious	Low	Low	Low	Low	Serious	Moderate
Voos (2017)	Serious	Low	Moderate	Unclear	Moderate	Serious	Moderate
Xu (2017)	Serious	Low	Unclear	Unclear	Serious	Serious	Moderate
Zhang et al. (2017)	Serious	Low	Unclear	Moderate	Low	Serious	Moderate

[#]RCT. For all RCTs in this table, the terms used to describe the level of bias have been changed from "Low," "High," and "Unclear" (used in the RoB tool), to "Low," "Moderate," "Serious," "Critical," and "Unclear," to reflect the terms and judgment guidelines used in ROBINS-I; [a]not relevant for RCTs; [b]For RCTs, the assessment of selection bias asks (1) whether there was random sequence generation and (2) whether there was allocation concealment. In this table, only one risk assessment is reported for RCTs under this bias domain, as the level of risk assessed for these two aspects of selection bias was equal for each of the reviewed RCTs.

for youth across internalizing, externalizing, cognitive, and social domains of psychological functioning. Improvements in youth externalizing and cognitive outcomes are predicted by reductions in parenting stress, but no relationship was found between youth internalizing outcomes and parenting stress. There were insufficient studies to test the relationship between parenting stress and social outcomes.

Parenting Stress

For parenting stress, the small within-group reduction (g = 0.34) obtained immediately after intervention rose to a moderate reduction (g = 0.53) 2 months later. This suggests that the positive impact on parenting stress of the mindfulness intervention continued after the intervention ended. Two studies also measured parenting stress 1 year after the intervention, both reporting the maintenance of small to moderate reductions in parenting stress at that point. The five controlled studies reviewed showed that mindfulness interventions have a small to moderate advantage (g = 0.44) over active and waitlist controls in reducing parenting stress. These results, together with the finding that pre-test mindful parenting scores are negatively correlated with post-test parenting stress, but not vice versa (Haydicky et al., 2015), provide initial evidence that mindfulness interventions for parents contribute to reduced parenting stress.

To place our findings regarding the parenting stress effect size into context, we sought to compare the current results against those obtained in other meta-analyses. We were unable to find meta-analyses of mindfulness or other interventions that aimed at lowering parenting stress specifically. However, Lundahl et al. (2006a) assessed parental emotional adjustment, which incorporated parenting stress. They reported a moderate within-group improvement in that outcome, in their review of parent programs to reduce child abuse. The post-intervention effect in that study (d = 0.53) was larger than in the present study (g = 0.34). This may have been because the measure of parental emotional adjustment included a number of negative emotional

states, such as anger, in addition to parenting stress. It is therefore possible that the effect size was driven by improvements in emotional states other than parenting stress.

We also sought to compare the advantage we found for mindfulness interventions over control groups to that found for other parent interventions. Again, we were unable to find any published meta-analyses concerning parenting stress as a stand-alone outcome. However, Lundahl et al. (2006b) reviewed the effects of parent training programs on a composite parenting outcome, which included parenting stress. Lundahl et al. (2006b) defined behavioral training programs as those teaching parents to reinforce their children's positive behavior and ignore or punish poor behavior. Non-behavioral programs were defined as those that did not teach these specific skills, and included programs aimed at improving parent-child communication or altering child-related cognitions. Based on this definition, mindfulness interventions are non-behavioral programs, and indeed the advantage over controls in the present study ($g = 0.44$) is similar to that found by Lundahl et al. (2006b) for non-behavioral parent programs ($d = 0.48$). The advantage of behavioral programs over controls was slightly larger ($d = 0.53$).

Interestingly, this review also found that the reduction in parenting stress was greater at follow up than post-intervention. This is in contrast to the pattern reported for behavioral parent training by Lee et al. (2012), who found a reduced effect at follow-up for a composite parenting outcome that included parenting stress. Similarly, the effects of cognitive behavioral therapy for general stress are maintained at follow up, but not increased (Hofmann et al., 2012). The present results suggest, therefore, that mindfulness interventions provide durable outcomes for parents, and compare favorably in this respect to behavioral parent training and cognitive behavioral therapy.

Heterogeneity in relation to parenting stress is moderate to high, indicating variance in the true effect size across studies. Possible reasons for this variability were tested through categorical moderator analyses and meta-regression. The reduction in parenting stress was not moderated by either youth age or clinical status, or the length of the mindfulness course. This suggests that parents acquire generic skills in mindfulness programs lasting from 9 to 27 h, that they are able to apply in various parenting environments, and across their child's development. In contrast, the reduction in parenting stress was greater when the intervention was delivered only to parents, than when it was delivered to parallel parent and youth groups. This result was surprising, since it is reasonable to expect that training both parents and their children in mindfulness would contribute to better outcomes, given the bi-directionality of parent and child factors (Branje et al., 2010; Neece, 2014). To investigate this result further, the characteristics of the two subgroups were checked. Of the six studies in the parallel interventions subgroup, five involved youth diagnosed with ADHD. However, amongst the 15 studies in the parent-only intervention subgroup, only three involved parents whose children had been diagnosed with ADHD. Further, these three studies reported only 47, 31, and 7% of the parents' children as having ADHD. While no conclusion can be drawn, it is possible that the smaller reduction in parenting stress amongst parents in the parallel intervention subgroup is related to their child's diagnosis of ADHD, rather than the fact that both parents and their children received the intervention.

Youth Outcomes

The results of our review show that mindfulness interventions for parents are associated with improved youth outcomes. The summary effects indicate small, within-group improvements in internalizing ($g = 0.29$), externalizing ($g = 0.26$), cognitive ($g = 0.27$), and social ($g = 0.28$) domains. These improvements are maintained after 2 months for the internalizing ($g = 0.33$), externalizing ($g = 0.39$), and cognitive ($g = 0.40$) domains. There were insufficient studies to conduct a follow-up analysis for the social domain. There were also insufficient controlled studies to conduct a quantitative comparison of intervention groups with controls, for any of the youth outcomes. The results reported by the few studies that included a control group are mixed, with mindfulness groups outperforming waitlist controls in some studies but not others, for both internalizing and externalizing outcomes.

This is the first published meta-analysis regarding the effectiveness of mindfulness interventions for parents in improving youth outcomes. There are, therefore, no equivalent studies to compare the effects found in the present review against. A review of mindfulness interventions delivered to children and adolescents in schools found within-group effects for emotional problems and cognitive performance of $g = 0.31$ and $g = 0.68$, respectively (Zenner et al., 2014). It is possible that the effects reported in that study were larger than those in the present review because the interventions were delivered directly to the children and adolescents, rather than to parents. Looking at other parent-focused interventions, a meta-meta-analysis of studies for treating youth with externalizing disorders obtained effects for youth outcomes (externalizing and internalizing problems combined) of $d = 0.46$ post-intervention and $d = 0.49$ at follow-up (Mingebach et al., 2018). The larger improvements found in that review may reflect the fact that the majority of reviewed studies involved behavioral parent training interventions. Mindfulness interventions for parents appear, therefore, to be associated with smaller improvements in youth outcomes than either behavioral parent training or mindfulness interventions for youth.

Heterogeneity in connection with youth outcomes is low to moderate. Mindfulness interventions for parents are associated with equally beneficial outcomes for children and adolescents, whether they attend mindfulness training in parallel with their parents or not, and regardless of the length of the mindfulness course. These results together suggest that even shorter mindfulness programs can result in changes to parental functioning that are positive for youth of any age. Meta-regressions were conducted to check whether change in parenting stress predicted youth outcomes. Greater reductions in parenting stress did predict greater improvements in youth externalizing and cognitive outcomes. This finding is consistent with previous studies showing that parenting stress is related to harsh, over-reactive parenting (Venta et al., 2016), and that harsh parenting predicts later youth behavior problems and poorer attentional regulation (Eisenberg et al., 1999; Rominov et al.,

2016). Therefore, reductions in parenting stress may improve externalizing and cognitive outcomes.

Unlike externalizing and cognitive outcomes, reductions in parenting stress did not predict improvements in youth internalizing outcomes. There are a number of possible explanations for this. While youth externalizing problems can be aversive to parents and contribute to higher parenting stress (Eisenberg et al., 1999; Neece et al., 2012), youth internalizing problems tend to be subtle and non-aversive (Eisenberg et al., 1999). Accordingly, it is possible that parents of youth with internalizing problems have a lower baseline level of parenting stress than do parents of youth with externalizing problems. In this case, we would expect a mindfulness intervention for parents of youth with internalizing problems to have less of an impact on parenting stress. Any relationship between change in parenting stress and change in internalizing problems may therefore be too small to detect. Mindfulness interventions for parents could also affect youth internalizing outcomes through a pathway other than parenting stress. For example, greater parental warmth and acceptance toward children are associated with lower youth internalizing problems (Yap and Jorm, 2015). As mindful parenting involves compassion, emotional warmth, and non-judgmental acceptance toward a child (Duncan et al., 2009, 2015), mindfulness interventions may improve internalizing outcomes by promoting these attitudes in parents. Internalizing problems are also associated with difficulties with emotion regulation (Suveg and Zeman, 2004). For example, greater use by parents of adaptive emotion regulation strategies, such as cognitive reappraisal, are associated with lower youth anxiety (Wald et al., 2018). Since mindful parenting is also associated with greater parental self-regulation (Duncan et al., 2009; Ridderinkhof et al., 2017), mindfulness interventions could reduce youth internalizing problems by facilitating healthier forms of emotional regulation in parents.

Methodological Limitations

There are several limitations affecting the strength of the evidence provided by both this review and the individual studies reviewed. At the review level, the number of studies available for inclusion is still small. For this reason, we treated studies of mindful parenting interventions and studies of other mindfulness-based interventions delivered to parents as a single group. However, it is not currently known whether these two types of mindfulness intervention have different outcomes for parents or youth, or whether they exert their effects through different pathways. The number of available studies also had implications for testing potential moderators, such as parent clinical status. It may also have affected our ability to detect significant moderators and covariates. For example, although we found no relationship between the length of the mindfulness course and either parenting stress or youth outcomes, some other meta-analyses have found dose-response relationships for a range of outcomes (Khoury et al., 2013; Zenner et al., 2014; cf. Vollestad et al., 2012). In general, due to the relatively small number of studies in this review, some caution should be applied to the interpretation of the moderator and meta-regression analyses. As more research is published on mindfulness interventions for parents, future reviews with greater power will provide more accurate information regarding significant moderators or covariates.

At the individual study level, small sample sizes are likely to have contributed to a lack of statistical power to detect significant effects in a number of studies. A scan of **Tables 2**, **3** reveals several moderate to large effects, both post-intervention and at follow-up, that are reported as non-significant. The availability of small samples may have been a reason for the single group design used in most of the reviewed studies. Due to the lack of randomization to intervention or control groups, we cannot conclude that the reported effects are caused by the mindfulness intervention. This is particularly the case for the various outcomes (anxiety, depression, well-being, rumination, and executive functioning) that significantly improved at follow up, but not immediately post-intervention. This longer term effect is consistent with the self-sustaining change proposed to be the result of mindfulness practice (Dumas, 2005). However, childhood is an ongoing period of development in which changes may occur in various domains of functioning over time, for many reasons. When more time has passed, it is more likely that extraneous variables may have contributed to changes in outcomes, making the causal link between the intervention and the effect more tenuous.

All studies were judged to have at least a serious risk of bias. Whilst this was partly due to the lack of randomization noted above, the subjective reporting of most outcomes in each study was also an issue. In the context of mindfulness interventions, which parents must invest a significant amount of time and effort to attend, relying on parent reports may increase the risk of detection bias. Although it is difficult to address this issue in studies in which many outcomes must be subjectively reported, obtaining reports from different sources, such as mothers, fathers, youth and teachers, and obtaining objective measures if possible, may give a more complete picture. For example, Lewallen and Neece (2015) found that teachers reported significant improvements in more social domains than parents did. This suggests that youth outcomes may differ across contexts. Similarly, the differences between mothers and fathers in post-intervention parenting stress (van de Weijer-Bergsma et al., 2012) might indicate a systematic difference in how mothers and fathers respond to a mindfulness intervention. Finally, assessment of treatment adherence and integrity was problematic in many studies, as limited information was reported regarding session attendance rates, homework completion or instructor training. Lack of detailed implementation-related data appears to be a common issue in connection with mindfulness interventions (Vollestad et al., 2012; Zou et al., 2018).

Future Directions

The results of this review show that further research on mindfulness interventions for parents is desirable. Future studies are needed to address the methodological limitations identified above. For example, there is evidence that variables such as therapist experience with mindfulness (Khoury et al., 2013), amount of home practice (Parsons et al., 2017) and total time of mindfulness training (Zenner et al., 2014) can moderate outcomes. Inclusion of more information on these

variables would allow reviewers to investigate more potential moderators. In addition, randomizing participants to control and intervention groups would allow firmer conclusions to be drawn about whether mindfulness in parenting played a causal role in relevant outcomes.

Use of randomized controlled studies would also allow comparisons to be made between mindfulness interventions and other active interventions such as behavioral parent training. For youth with externalizing problems, behavioral parent training is an effective and widely used intervention (Dretzke et al., 2009). However, some parents, such as those with their own psychopathology, benefit less from behavioral parent training than others (Maliken and Katz, 2013). This may be because these parents find it difficult to apply new parenting skills in stressful situations with their child and revert to old patterns of responding in those situations (Siegel and Hartzell, 2004). Given its focus upon reducing parenting stress, mindfulness-based interventions might be of greater benefit to these families than behavioral parent training.

The majority of studies involved parents with children under 12 years, or parents managing youth externalizing problems. Very few studies included parents of youth with internalizing problems. It is therefore recommended that additional research be done in community samples or in clinical samples of families experiencing youth internalizing problems. As no relationship was found between parenting stress and youth internalizing outcomes, research with these samples could investigate whether mindfulness in parenting is associated with potential mediators other than parenting stress. These could include parental factors known to be associated with youth internalizing problems. Finally, relatively few studies examined outcomes for families with adolescents and only one of these (Corthorn, 2018) included parents of adolescents without a clinical diagnosis. Adolescence is associated with increased negative affect (Kim et al., 2001) and conflict (Laursen et al., 1998), and may be a time of potentially stressful change in the parent-child relationship (Duncan et al., 2009). Importantly, it is also a time when many psychological disorders are first diagnosed (Copeland et al., 2009). Research could usefully address the question of whether mindfulness interventions for parents of adolescents are effective as a preventive intervention for adolescent psychological problems.

CONCLUSION

The results of the present review show that mindfulness interventions for parents are associated with reduced parenting stress for parents of both children and adolescents. They are also associated with improved youth psychological functioning across internalizing, externalizing, cognitive, and social domains. Reduced parenting stress predicts improvement in youth externalizing and cognitive outcomes, but not youth internalizing outcomes. Methodological weaknesses in the available literature prevent firm conclusions from being drawn regarding the causal role of mindfulness training for parents in relation to each of these outcomes. Further research is recommended to address limitations in the current literature and questions raised by this review.

AUTHOR CONTRIBUTIONS

VB designed and conducted the review and meta-analysis and wrote the manuscript. MS and MA reviewed the design and collaborated on editing the manuscript.

ACKNOWLEDGMENTS

The authors thank Avalon Tissue, Masters of Clinical Psychology student at The University of Sydney, for her contribution in reviewing the list of studies for inclusion, and conducting a risk of bias review of all included studies.

REFERENCES

Abidin, R. R. (1983). *Parenting Stress Index manual*. Charlottesville: Pediatric Psychology Press.

Abidin, R. R. (1995). *Parenting Stress Index: Professional Manual* 3rd ed. Odessa, FL: Psychological Assessment Resources Inc.

Achenbach, T. M. (1991a). *Manual for the Youth Self-Report and 1991 Profile*. Burlington: University of Vermont.

Achenbach, T. M. (1991b). *Manual for the Child Behaviour Checklist/4-18 and 1991 Profile*. Burlington: University of Vermont.

Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., and Shaffer, S. (2005). The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant Child Dev.* 14, 133–154. doi: 10.1002/icd.385

Auyeung, B., Baron-Cohen, S., Wheelwright, S., and Allison, C. (2008). The autism spectrum quotient: children's version (AQ-Child). *J. Autism Dev. Disord.* 38, 1230–1240. doi: 10.1007/s10803-007-0504-z

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., and Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment* 13, 27–45. doi: 10.1177/1073191105283504

Bayer, J. K., Hiscock, H., Ukoumunne, O. C., Price, A., and Wake, M. (2008). Early childhood aetiology of mental health problems: a longitudinal population-based study. *J. Child Psychol. Psychiatry*, 49, 1166–1174. doi: 10.1111/j.1469-7610.2008.01943.x

Bazzano, A., Wolfe, C., Zylowska, L., Wang, S., Schuster, E., Barrett, C., et al. (2015). Mindfulness based stress reduction (MBSR) for parents and caregivers of individuals with developmental disabilities: a community-based approach. *J. Child Family Stud.* 24, 298–308. doi: 10.1007/s10826-013-9836-9

Bech, P., Olsen, L. R., Kjoller, M., and Rasmussen, N. (2003). Measuring well-being rather than the absence of distress symptoms: a comparison of the SF-36 Mental Health subscale and the WHO-5 Well-Being Scale. *Int. J. Methods Psychiatr. Res.* 12, 85–91. doi: 10.1002/mpr.145

Beck, A., Steer, R., and Brown, G. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.

Berry, J. O., and Jones, W. H. (1995). The parental stress scale: initial psychometric evidence. *J. Soc. Personal Relation.* 12, 463–472. doi: 10.1177/0265407595123009

Bögels, S. (2013). *MYmind Mindfulness for Children and Adolescents With ADHD: Therapist's Manual*. Amsterdam: University of Amsterdam.

Bögels, S. M., Hellemans, J., van Deursen, S., Romer, M., and van der Meulen, R. (2014). Mindful parenting in mental health care: effects on parental and child psychopathology, parental stress, parenting, coparenting and marital functioning. *Mindfulness* 5, 536–551. doi: 10.1007/s12671-013-0209-7

Bögels, S. M., Hoogstad, B., van Dun, L., de Schutter, S., and Restifo, K. (2008). Mindfulness training for adolescents with externalising

disorders and their parents. *Behav. Cogn. Psychother.* 36, 193–209. doi: 10.1017/S1352465808004190

Bögels, S. M., Lehtonen, A., and Restifo, K. (2010). Mindful parenting in mental health care. *Mindfulness* 1, 107–120. doi: 10.1007/s12671-010-0014-5

Bögels, S. M., and Restifo, K. (2013). *Mindful Parenting in Mental Health Care*. New York, NY: Springer.

Bögels, S. M., and Restifo, K. (2014). *Mindful Parenting: A Guide for Mental Health Practitioners*. New York, NY: Springer.

Bögels, S. M., and van Melick, M. (2004). The relationship between child-report, parent self-report, and partner report of perceived parental rearing behaviours and anxiety in children and parents. *Personal. Individ. Differ.* 37, 1583–1596. doi: 10.1016/j.paid.2004.02.014

Borenstein, M., Hedges, L. V., Higgins, J. P. T., and Rothstein, H. R. (2009). *Introduction to Meta-Analysis*. Chichester: John Wiley.

Branje, S. J., Hale, W., Frijns, T., and Meeus, W. (2010). Longitudinal associations between perceived parent-child relationship quality and depressive symptoms in adolescence. *J. Abnormal Child Psychol.* 38, 751–763. doi: 10.1007/s10802-010-9401-6

Brown, K. W., and Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *J. Personal. Soc. Psychol.* 84, 822–848. doi: 10.1037/0022-3514.84.4.822

Brown, K. W., West, A. M., Loverich, T. M., and Biegel, G. M. (2011). Assessing adolescent mindfulness: validation of an adapted Mindful Attention Awareness Scale in adolescent normative and psychiatric populations. *Psychol. Assess.* 23, 1023–1033. doi: 10.1037/a0021338

Campbell, K., Thoburn, J. W., and Leonard, H. D. (2017). The mediating effects of stress on the relationship between mindfulness and parental responsiveness. *Couple Family Psychol.* 6, 48–59. doi: 10.1037/cfp0000075

Chan, N., and Neece, C. L. (2018). Parenting stress and emotion dysregulation among childrenwith developmental delays: the role of parenting behaviours. *J. Child Family Stud.* 2018:1219. doi: 10.1007/s10826-018-1219-9

Chaplin, T. M., Turpyn, C. C., Fischer, S., Martelli, A. M., Ross, C. E., Leichtweis, R. N., et al. (2018). Parenting-focused mindfulness intervention reduces stress and improves parenting in highly stressed mothers of adolescents. *Mindfulness* 2018:1026. doi: 10.1007/s12671-018-1026-9

Chorpita, B. F., Yim, L., Moffitt, C. E., Umemoto, L. A., and Francis, S. E. (2000). Assessment of symptoms of DSM-IV anxiety and depression in children: a revised child anxiety and depression scale. *Behav. Res. Ther.* 38, 835–855. doi: 10.1016/S0005-7967(99)00130-8

Coatsworth, J. D., Duncan, L. G., Berrena, E., Bamberger, K. T., Loeschinger, D., Greenberg, M. T., et al. (2014). "The mindfulness-enhanced strengthening families program: integrating brief mindfulness activities and parent training within an evidence-based prevention program," in *Mindfulness in Adolescence,* eds E. Oberle and K. Schonert-Reichl (San Francisco, CA: Jossey-Bass), 45–58.

Coatsworth, J. D., Duncan, L. G., Greenberg, M. T., and Nix, R. L. (2010). Changing parents' mindfulness, child management skills and relationship quality with their youth: results from a randomised pilot intervention trial. *J. Child Family Stud.* 19, 203–217. doi: 10.1007/s10826-009-9304-8

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*. New York, NY: Routledge.

Conners, C. K. (2008). *Conners*-3rd ed. Toronto, ON: Multi-Health Systems Inc.

Conners, C. K. (2015). *Conners Continuous Performance Test* 3rd ed *(Conners CPT), Conners Continuous Auditory Test of Attention (Conners CATA) Manual*. Canada: Multi-Health Systems Inc.

Constantino, J. N., and Gruber, C. P. (2005). *Social Responsiveness Scale (SRS) Manual*. Los Angeles, CA: Western Psychological Services.

Copeland, W. E., Shanahan, L., Costello, E. J., and Angold, A. (2009). Which childhood and adolescent psychiatric disorders predict which young adult disorders? *Arch. General Psychiatry* 66, 764–772. doi: 10.1001/archgenpsychiatry.2009.85

Corthorn, C. (2018). Benefits of mindfulness for parenting for mothers of preschoolers in Chile. *Front. Psychol.* 9:1443. doi: 10.3389/fpsyg.2018.01443

Daley, D., and Birchwood, J. (2010). ADHD and academic performance: why does ADHD impact on academic performance and what can be done to support ADHD children in the classroom? *Child Care Health Dev.* 36, 455–464. doi: 10.1111/j.1365-2214.2009.01046.x

Davis, N. O., and Carter, A. S. (2008). Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: associations with child characteristics. *J. Autism Dev. Disord.* 38, 1278–1291. doi: 10.1007/s10803-007-0512-z

De Bruin, E. I., Blom, R., Smit, F. M. A., van Steensel, F. J. A., and Bögels, S. M. (2015). MYmind: mindfulness training for youngsters with autism spectrum disorders and their parents. *Autism* 19, 906–914. doi: 10.1177/1362361314553279

De Bruin, E. I., Sieh, D. S., Zijlstra, B. J., and Meijer, A. M. (2017). Chronic childhood stress: psychometric properties of the chronic stress questionnaire for children and adolescents (CSQ-CA) in three independent samples. *Child Indic. Res.* 2017:9478. doi: 10.1007/s12187-017-9478-3.

De Bruin, E. I., Zijlstra, B. J., and Bögels, S. M. (2013). The meaning of mindfulness in children and adolescents: further validation of the Child and Adolescent Mindfulness Measure (CAMM) in two independent samples from the Netherlands. *Mindfulness* 2013:196. doi: 10.1007/s12671-013-0196-8.

de Cock, E. S. A., Henrichs, J., Klimstra, T. A., Janneke, B. M. M. A., Vreeswijk, C., Meeus, W. H. J., et al. (2017). Longitudinal associations between parental bonding, parenting stress, and executive functioning in toddlerhood. *J. Child Family Stud.* 26, 1723–1733. doi: 10.1007/s10826-017-0679-7

De Sonneville, L. M. J. (1999). "Amsterdam neuropsychological tasks: a computer-aided assessment program," in *Cognitive Ergonomics, Clinical Assessment and Computer-assisted Learning: Computers in Psychology* Vol. 6, eds B. P. L. M. den Brinker, P. J. Beek, A. N. Brand, S. J. Maarse, and L. J. M. Mulder (Lisse: Swets and Zeitlinger), 187–203.

Deater-Deckard, K., Li, M., and Bell, M. A. (2016). Multifaceted emotion regulation, stress and affect in mothers of young children. *Cogn. Emot.* 30, 444–457. doi: 10.1080/02699931.2015.1013087

Dretzke, J., Davenport, C., Frew, E., Barlow, J., Stewart-Brown, S., Bayliss, S., and Hyde, C. (2009). The clinical effectiveness of different parenting programmes for children with conduct problems: a systematic review of randomised controlled trials. *Child Adolescent Psychiatry Mental Health* 3:7. doi: 10.1186/1753-2000-3-7

Dumas, J. E. (2005). Mindfulness-based parent training: strategies to lessen the grip of automaticity in families with disruptive children. *J. Clin. Child Adolescent Psychol.* 34, 779–791. doi: 10.1207/s15374424jccp3404_20

Duncan, L. G., Coatsworth, J., and Greenberg, M. T. (2009). A model of mindful parenting: implications for parent-child relationships and prevention research. *Clin. Child Family Psychol. Rev.* 12, 255–270. doi: 10.1007/s10567-009-0046-3

Duncan, L. G., Coatsworth, J. D., Gayles, J. G., Geier, M. H., and Greenberg, M. T. (2015). Can mindful parenting be observed? Relations between observational ratings of mother–youth interactions and mothers' self-report of mindful parenting. *J. Family Psychol.* 29, 276–282. doi: 10.1037/a0038857

Duval, S., and Tweedie, R. (2000). Trim and fill: a simple funnel-plot-based method of testing and adjusting for publication bias in meta-anaysis. *Biometrics* 56, 455–463. doi: 10.1111/j.0006-341X.2000.00455.x

Eames, C., Crane, R., Gold, E., and Pratt, S. (2015). Mindfulness-based wellbeing for socio-economically disadvantaged parents: a pre-post pilot study. *J. Child. Serv.* 10, 17–28. doi: 10.1108/JCS-09-2014-0040

Eisenberg, N., Fabes, R. A., Shepard, S. A., Guthrie, I. K., Murphy, B. C., and Reiser, M. (1999). Parental reactions to children's negative emotions: longitudinal relations to quality of children's social functioning. *Child Dev.* 70, 513–534. doi: 10.1111/1467-8624.00037

Ferraioli, S. J., and Harris, S. L. (2013). Comparative effects of mindfulness and skills-based parent training programs for parents of children with autism: feasibility and preliminary outcome data. *Mindfulness* 4, 89–101. doi: 10.1007/s12671-012-0099-0

Fresco, D. M., Moore, M., van Dulmen, M., Segal, Z., Ma, S., Teasdale, J., et al. (2007). Initial psychometric properties of the Experiences Questionnaire: validation of a self-report measure of decentring. *Behav. Ther.* 38, 234–246. doi: 10.1016/j.beth.2006.08.003

Friedrich, W. N., Greenberg, M. T., and Crnic, K. (1983). A short-form of the Questionnaire on Resources and Stress. *Am. J. Mental Deficiency* 88, 41–48.

Fu, R., Gartlehner, G., Grant, M., Shamliyan, T., Sedrakyan, A., Wilt, T. J., et al. (2011). Conducting quantitative synthesis when comparing medical

interventions: AHRQ and the Effective Health Care Program. *J. Clin. Epidemiol.* 64, 1187–1197. doi: 10.1016/jclinepi.2010.08.010

Goia, G. A., Isquith, P. K., Guy, S. C., and Kenworthy, L. (2000). *Behaviour Rating Inventory of Executive Function (BRIEF): Professional Manual*. Lutz: Psychological Assessment Resources.

Goodman, R. (1997). The strengths and difficulties questionnaire: a research note. *J. Child Psychol. Psychiatry* 38, 581–586. doi: 10.1111/j.1469-7610.1997.tb01545.x

Gradisar, M., Lack, L., Richards, H., Harris, J., Gallasch, J., Boundy, M., et al. (2007). The flinders fatigue scale: preliminary psychometric properties and clinical sensitivity of a new scale for measuring daytime fatigue associated with insomnia. *J. Clinical Sleep Med.* 3, 722–728.

Gresham, F. M., and Elliott, S. N. (2008). *Social Skills Improvement System Rating Scales*. Minneapolis: NCS Pearson.

Harnett, P. H., and Dawe, S. (2012). The contribution of mindfulness-based therapies for children and families and proposed conceptual integration. *Child Adolescent Mental Health* 17, 195–208. doi: 10.1111/j.1475-3588.2011.00643.x

Haydicky, J., Shecter, C., Wiener, J., and Ducharme, J. M. (2015). Evaluation of MBCT for adolescents with ADHD and their parents: impact on individual and family functioning. *J. Child Family Stud.* 24, 76–94. doi: 10.1007/s10826-013-9815-1

Hedges, L. V., and Olkin, I. (1985). *Statistical Methods for Meta-Analysis*. San Diego, CA: Academic Press.

Higgins, J. P., Altman, D. G., Gotzsche, P. C., Juni, P., Moher, D., Oxman, A. D., et al. (2011). The cochrane collaboration's tool for assessing risk of bias in randomised trials. *Br. Med. J.* 343, 1–9. doi: 10.1136/bmj.d5928

Higgins, J. P., Thompson, S. G., Deeks, J. J., and Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *Br. Med. J.* 6, 357–360. doi: 10.1136/bmj.327.7414.557

Hoffman, C., Crnic, K. A., and Baker, J. K. (2006). Maternal depression and parenting: implications for children's emergent emotion regulation and behavioral functioning. *Parent. Sci. Pract.* 6, 271–295. doi: 10.1207/s15327922par0604_1

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., and Fang, A. (2012). The efficacy of cognitive behavioural therapy: a review of meta-analyses. *Cogn. Ther. Res.* 36, 427–440. doi: 10.1007/s10608-012-9476-1

Huth-Bocks, A. C., and Hughes, H. M. (2007). Parenting stress, parenting behavior, and children's adjustment in families experiencing intimate partner violence. *J. Family Violence* 23, 243–251. doi: 10.1007/s10896-007-9148-1

Jones, L., Gold, E., Totsika, V., Hastings, R. P., Jones, M., Griffiths, A., et al. (2018). A mindfulness parent wellbeing course: evaluation of outcomes for parents of children with autism and related disabilities recruited through special schools. *Eur. J. Special Needs Educ.* 33, 16–30. doi: 10.1080/08856257.2017.1297571

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: past, present, and future. *Clin. Psychol.* 10, 144–156. doi: 10.1093/clipsy/bpg016

Kabat-Zinn, J. (2015). Mindfulness. *Mindfulness* 6, 1481–1483. doi: 10.1007/s12671-015-0456-x

Kabat-Zinn, J., and Kabat-Zinn, M. (1997). *Everyday Blessings. The Inner Work of Mindful Parenting*. New York, NY: First Trade.

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., and Pbert, L., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *Am. J. Psychiatry* 149:936. doi: 10.1176/ajp.149.7.936

Kendall, P. (1979). Self-control rating scale. *J. Consult. Clin. Psychol.* 40, 1020–1029.

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., et al. (2013). Mindfulness-based therapy: a comprehensive meta-analysis. *Clin. Psychol. Rev.* 33, 763–771. doi: 10.1016/j.cpr.2013.05.005

Kim, K. J., Conger, R. D., Lorenz, F. O., and Elder, G. H. (2001). Parent-adolescent reciprocity in negative affect and its relation to early adult social development. *Dev. Psychol.* 37, 775–790. doi: 10.1037/0012-1649.37.6.775

Laursen, B., Coy, K. C., and Collins, W. A. (1998). Reconsidering changes in parent-child conflict across adolescence: a meta-analysis. *Child Dev.* 69, 817–832. doi: 10.1111/j.1467-8624.1998.tb06245.x

Lavee, Y., Sharlin, S., and Katz, R. (1996). The effect of parenting stress on marital quality: an integrated mother-father model. *J. Family Issues* 17, 114–135. doi: 10.1177/019251396017001007

Lee, P., Niew, W., Yang, H., Chen, V. C., and Lin, K. (2012). A meta-analysis of behavioural parent training for children with attention deficit hyperactivity disorder. *Res. Dev. Disabil.* 33, 2040–2049. doi: 10.1016/j.ridd.2012.05.011

Lewallen, A. C., and Neece, C. L. (2015). Improved social skills in children with developmental delays after parent participation in MBSR: the role of parent-child relational factors. *J. Child Family Stud.* 24, 3117–3129. doi: 10.1007/s10826-015-0116-8

Linehan, M. M. (1993). *Skills Training Manual for Treating Borderline Personality Disorder*. New York, NY: Guilford Press.

Lo, H. H. M., Chan, S. K. C., Szeto, M. P., Chan, C. Y. H., and Choi, C. W. (2017a). A feasibility study of a brief mindfulness-based program for parents of preschool children with developmental disabilities. *Mindfulness* 8, 1665–1673. doi: 10.1007/s12671-017-0741-y

Lo, H. H. M., Wong, S. W. L., Wong, J. Y. H., Yeung, J. W. K., Snel, E., and Wong, S. Y. S. (2017b). The effects of family-based mindfulness intervention on ADHD symptomology in young children and their parents: a randomised control trial. *J. Attention Disord.* 2017:43330. doi: 10.1177/1087054717743330

Lundahl, B., Risser, H. J., and Lovejoy, M. C. (2006b). A meta-analysis of parent training: moderators and follow-up effects. *Clin. Psychol. Rev.* 26, 86–104. doi: 10.1016/j.cpr.2005.07.004

Lundahl, B., Nimer, J., and Parsons, B. (2006a). Preventing child abuse: a meta-analysis of parent training programs. *Res. Soc. Work Pract.* 16, 251–262. doi: 10.1177/1049731505284391

Luteijn, E., Luteijn, F., Jackson, S., Volkmar, F., and Mideraa, R. B. (2000). The children's social behaviour questionnaire for milder variants of PDD problems: evaluation of the psychometric characteristics. *J. Autism Dev. Disord.* 30, 317–330. doi: 10.1023/A:1005527300247

Lyubomirsky, S., and Lepper, H. S. (1999). A measure of subjective happiness. *Soc. Indic. Res.* 46:137. doi: 10.1023/A:1006824100041

Malecki, C. K., and Elliott, S. N. (2002). Children's social behaviours as predictors of academic achievement: a longitudinal analysis. *School Psychol. Quart.* 17, 1–23. doi: 10.1521/scpq.17.1.1.19902

Maliken, A. C., and Katz, L. F. (2013). Exploring the impact of parental psychopathology and emotion regulation on evidence-based parenting interventions: a transdiagnostic approach to improving treatment effectiveness. *Clin. Child Family Psychol. Rev.* 16, 173–186. doi: 10.1007/s10567-013-0132-4

Maloney, R., and Altmaier, E. (2007). An initial evaluation of a mindful parenting program. *J. Clin. Psychol.* 63, 1231–1238. doi: 10.1002/jclp.20395

Manly, T., Anderson, V., Nimmo-Smith, I., Turner, A., Watson, P., and Robertson, I. H. (2001). The differential assessment of children's attention: the Test of Everyday Attention for Children (TEA-Ch), normative sample and ADHD performance. *J. Child Psychol. Psychiatry* 42, 1065–1081. doi: 10.1017/S0021963001007909

Mann, J., Kuyken, W., O'Mahen, H., Ukoumunne, O. C., Evans, A., and Ford, T. (2016). Manual development and pilot randomised controlled trial of mindfulness-based cognitive therapy versus usual care for parents with a history of depression. *Mindfulness* 7, 1024–1033. doi: 10.1007/s12671-016-0543-7

McMahon, C. A., and Meins, E. (2012). Mind-mindedness, parenting stress, and emotional availability in mothers of preschoolers. *Early Childhood Res. Quart.* 27, 245–252. doi: 10.1016/j.ecresq.2011.08.002

Meijer, A. (2008). Chronic sleep reduction, functioning at school and school achievement in preadolescents. *J. Sleep Res.* 17, 395–405. doi: 10.1111/j.1365-2869.2008.00677.x

Meppelink, R., de Bruin, E. I., Wanders-Mulder, F. H., Vennik, C. J., and Bögels, S. M. (2016). Mindful parenting training in child psychiatric settings: heightened parental mindfulness reduces parents' and children's psychopathology. *Mindfulness* 7, 680–689. doi: 10.1007/s12671-016-0504-1

Meyer, T. J., Miller, M. L., Metzger, R. L., and Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behav. Res. Ther.* 28, 487–495. doi: 10.1016/0005-7967(90)90135-6

Mingebach, T., Kamp-Becker, I., Christiansen, H., and Weber, L. (2018). Meta-meta-analysis on the effectiveness of parent-based interventions for the treatment of child externalising behaviour problems. *PLoS ONE* 13:e0202855. doi: 10.1371/journal.pone.0202855

Moher, D., Liberati, A., Tetzlaff, J., and Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med*. 6:97. doi: 10.1371/journal.pmed1000097

Neece, C. L. (2014). Mindfulness-based stress reduction for parents of young children with developmental delays: implications for parental mental health and child behaviour problems. *J. Appl. Res. Intellect. Disabil.* 27, 174–186. doi: 10.1111/jar.12064

Neece, C. L., Chan, N., Klein, K., Roberts, L., and Fenning, R. M. (2018). Mindfulness-based stress reduction for parents of children with developmental delays: understanding the experiences of Latino families. *Mindfulness* 2018:1011. doi: 10.1007/s12671-018-1011-3

Neece, C. L., Green, S. A., and Baker, B. L. (2012). Parenting stress and child behaviour problems: a transactional relationship across time. *Am. J. Intellect. Dev. Disabil.* 117, 48–66. doi: 10.1352/1944-7558-117.1.48

Neff, K. (2015). The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness* 7, 264–274. doi: 10.1007/s12671-015-0479-3

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *J. Abnormal Psychol.* 109, 504–511. doi: 10.1037/0021-843X.109.3.504

Parent, J., McKee, L. G., Rough, J. N., and Forehand, R. (2016). The association of parent mindfulness with parenting and youth psychopathology across three developmental stages. *J. Abnormal Child Psychol.* 44, 191–202. doi: 10.1007/s10802-015-9978-x

Parsons, C. E., Crane, C., Parsons, L. J., Fjorback, L. O., and Kuyken, W. (2017). Home practice in mindfulness-based cognitive therapy and mindfulness-based stress reduction: a systematic review and meta-analysis of participants' mindfulness practice and its association with outcomes. *Behav. Res. Ther.* 95, 29–41. doi: 10.1016/j.brat.2017.05.004

Pelham, W. E., Gnagy, E. M., Greenslade, K. E., and Milich, R. (1992). Teacher ratings of DSM-III-R symptoms for the disruptive behaviour disorders. *J. Am. Acad. Child Adolescent Psychiatry* 31, 210–218. doi: 10.1097/00004583-199203000-00006

Pinquart, M. (2017). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: an updated meta-analysis. *Dev. Psychol.* 53, 873–932. doi: 10.1037/dev0000295

Placone-Willey, P. M. (2002). *A Curriculum for Mindful Parenting: A Model Development Dissertation*. Dissertations Abstracts International, 63(01), 568B (UMI No. 3040781).

Posner, M. I., and Petersen, S. E. (1990). The attention system of the human brain. *Ann. Rev. Neurosci.* 13, 25–42.

Potharst, E. S., Aktar, E., Rexwinkel, M., Rigterink,. M., and Bögels, S. M. (2017). Mindful with your baby: feasibility, acceptability and effects of a mindful parenting group training for mothers and their babies in a mental health context. *Mindfulness* 8, 1236–1250. doi: 10.1007/s12671-017-0699-9

Potharst, E. S., Baartmans, J. M. D., and Bögels, S. M. (2018). Mindful parenting training in a clinical versus non-clinical setting: an explorative study. *Mindfulness* 2018:1021. doi: 10.1007/s12671-018-1021-1

Putnam, S. P., Helbig, A. L., Gartstein, M. A., Rothbart, M. K., and Leerkes, E. (2014). Development and assessment of short and very short forms of the Infant Behaviour Questionnaire-revised. *J. Personal. Assess.* 96, 445–458. doi: 10.1080/00223891.2013.841171

Racey, D. N., Fox, J., Berry, V. L., Blockley, K. V., Longridge, R. A., Simmons, J. L., et al. (2017). Mindfulness-based cognitive therapy for young people and their carers: a mixed-method feasibility study. *Mindfulness* 2017:842. doi: 10.1007/s12671-017-0842-7

Ridderinkhof, A., de Bruin, E. I., Blom, R., and Bögels, S. M. (2017). Mindfulness-based program for children with autism spectrum disorder and their parents: direct and long-term improvements. *Mindfulness* 2017:815. doi: 10.1007/s12671-017-0815-x

Robinson, E. A., Eyberg, S. M., and Ross, A. W. (1980). The standardisation of an inventory of child conduct problems. *J. Clin. Child Psychol.* 9, 22–29.

Robinson, M., and Neece, C. L. (2015). Marital satisfaction, parental stress, and child behavior problems among parents of young children with developmental delays. *J. Mental Health Res. Intellect. Disabil.* 8, 23–46. doi: 10.1080/19315864.2014.994247

Rominov, H., Giallo, R., and Whelan, T. A. (2016). Fathers' postnatal distress, parenting self-efficacy, later parenting behavior, and children's emotional-behavioral functioning: a longitudinal study. *J. Family Psychol.* 30, 907–917. doi: 10.1037/fam0000216

Rosenthal, R. (1993). *Meta-Analytic Procedures for Social Research*. Newbury Park, CA: Sage.

Segal, Z., Williams, J., and Teasdale, J. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse*. New York, NY: Guildford Press.

Sheras, P. L., Abidin, R. R., and Konold, T. R. (1998). *Stress Index for Parents of Adolescents (SIPA)*. Lutz: Psychological Assessment Resources Inc.

Shields, A., and Cicchetti, D. (1997). Emotion regulation among school-age children: the development and validation of a new criterion Q-sort scale. *Dev. Psychol.* 33, 906–916. doi: 10.1037/0012-1649.33.6.906

Short, V. L., Gannon, M., Weingarten, W., Kaltenbach, K., LaNoue, M., and Abatemarco, D. J. (2017). Reducing stress among mothers in drug treatment: a description of a mindfulness based parenting intervention. *Matern. Child Health J.* 21, 1377–1386. doi: 10.1007/s10995-016-2244-1

Siegel, D. J., and Hartzell, M. (2004). *Parenting From the Inside Out: How a Deeper Self-Understanding Can Help You Raise Children Who Thrive*. New York, NY: Penguin.

Sparrow, S., Balla, D. A., and Cicchetti, D. (1984). *Vineland Adaptive Behaviour Scales*. 2nd ed. Minneapolis, MN: Pearson.

Sterne, J. A., Hernan, M. A., Reeves, B. C., Savovic, J., Berkman, N. D., Viswanathan, M., et al. (2016). ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions. *Br. Med. J.* 355:i4919. doi: 10.1136/bmj.i4919

Suveg, C., and Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *J. Clin. Child Adolescent Psychol.* 33, 750–759. doi: 10.1207/s15374424jccp3304_10

Swanson, J. M., Schuck, S., Porter, M. M., Carlson, C., Hartman, C. A., Sergeant, J. A., et al. (2012). Categorical and dimensional definitions and evaluations of symptoms or ADHD: History of the SNAP and the SWAN rating scales. *Int. J. Educ. Psychol. Assess.* 10, 51–70.

Townshend, K., Jordan, Z., Stephenson, M., and Tsey, K. (2016). The effectiveness of mindful parenting programs in promoting parents' and children's wellbeing: a systematic review. *JBI Database Syst. Rev. Implement. Rep.* 2016:2314. doi: 10.11124/JBISRIR-2016-2314

van de Weijer-Bergsma, E., Formsma, A. R., de Bruin, E. I., and Bögels, S. M. (2012). The effectiveness of mindfulness training on behavioural problems and attentional functioning in adolescents with ADHD. *J. Child Family Stud.* 21, 775–787. doi: 10.1007/s10826-011-9531-7

van der Oord, S., Bögels, S. M., and Peijnenburg, D. (2012). The effectiveness of mindfulness training for children with ADHD and mindful parenting for their parents. *J. Child Family Stud.* 21, 139–147. doi: 10.1007/s10826-011-9457-0

Veerman, J. W., Kroes, G., De Meyer, R. E., Nguyen, L. M., and Vermulst, A. A. (2014). Opvoedingsbelasting in kaart gebracht. *Een kennismaking Opvoedingsbelastingvragenlijst* 2014:16. doi: 10.1007/s12452-014-0016-0

Venta, A., Velez, L., and Lau, J. (2016). The role of parental depressive symptoms in predicting dysfunctional discipline among parents at high-risk for child maltreatment. *J. Child Family Stud.* 25, 3076–3082. doi: 10.1007/s10826-016-0473-y

Vollestad, J., Nielsen, M. B., and Nielsen, G. H. (2012). Mindfulness- and acceptance-based interventions for anxiety disorders: a systematic review and meta-analysis. *Br. J. Clin. Psychol.* 51, 239–260. doi: 10.1111/j.2044-8260.2011.02024.x

Voos, A. C. (2017). *An Initial Evaluation of the Mindful Parenting Group for Parents of Children with Autism Spectrum Disorder*. (Doctoral thesis). Available from ProQuest Dissertations and Theses database. *Record number* 10634080.

Wald, N., Carthy, T., Shenaar-Golan, V., Tadmor-Zisman, Y., and Ziskind, M. (2018). Influence of maternal negative emotion reactivity and cognitive reappraisal on child anxiety disorder. *Depress. Anxiety* 35, 353–359. doi: 10.1002/da.22745

Xu, Y. (2017). *Parental Stress, Emotion Regulation, Meta-Emotion, and Changes Following an MBSR Intervention*. (Doctoral thesis). Available from ProQuest Dissertations and Theses database. Record number 10622067.

Yap, M. B. H., and Jorm, A. F. (2015). Parental factors associated with childhood anxiety, depression and internalising problems: a systematic review and meta-analysis. *J. Affect. Disord.* 175, 424–440. doi: 10.1016/j.jad.2015.01.050

Zenner, C., Herrnleben-Kurz, S., and Walach, H. (2014). Mindfulness-based interventions in schools: a systematic review and meta-analysis. *Front. Psychol.* 5:603. doi: 10.3389/fpsyg.2014.00603

Zhang, D., Chan, S. K. C., Lo, H. H. M., Chan, C. Y. H., Chan, J. C. Y., Ting, K. T., et al. (2017). Mindfulness-based intervention for Chinese children with ADHD and their parents: A pilot mixed-method study. *Mindfulness 8*, 859–872. doi: 10.1007/s12671-016-0660-3

Zou, L., Yeung, A., Quan, X., Boyden, S. D., and Wang, H. (2018). A systematic review and meta-analysis of mindfulness-based (baduanjin) exercise for alleviating musculoskeletal pain and improving sleep quality in people with chronic diseases. *Int. J. Environ. Res. Public Health* 25:5020206. doi: 10.3390/ijerph15020206

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Appendix A2

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	p.1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	p.1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	p.3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	p.3
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	n/a
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	p.3
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	pp.3-4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	p.3
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	p.4
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	p.4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	p.3
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	pp.14-15
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	pp.4, 9
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	pp.4, 9

Appendix A2

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	p.18
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	p.14
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	p.15
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	p.15
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	pp.18-19
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	pp.5-14
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	pp.15-18
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	p.18
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	pp.15-17
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	pp.19-23
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	p.22
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	pp.22-23
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	p.23

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

frontiers in Psychology

Appendix B1

ORIGINAL RESEARCH
published: 03 February 2021
doi: 10.3389/fpsyg.2020.633709

The Interpersonal Mindfulness in Parenting Scale in Mothers of Children and Infants: Factor Structure and Associations With Child Internalizing Problems

Virginia Burgdorf and Marianna Szabó*

School of Psychology, The University of Sydney, Sydney, NSW, Australia

Objectives: Mindful parenting, measured by the Interpersonal Mindfulness in Parenting scale (IMP), is beneficial for parents and children. However, the IMP has not been validated in English-speaking parents. Further, little is known about whether mindful parenting is similar in parents of children vs. infants, or how it reduces child internalizing problems. We sought to validate the IMP in English-speaking mothers of children and infants, and to examine relationships between the facets of mindful parenting, child internalizing problems and parent variables related to internalizing.

Methods: Using confirmatory factor analyses, we examined the fit of various models of mindful parenting in English-speaking community-recruited mothers of children aged 3–18 years (n = 396) and infants aged 0–2 years (n = 320). We used regression analyses to investigate relationships between the facets of mindful parenting, child internalizing problems, and parent variables including parental experiential avoidance, unhelpful beliefs about child anxiety and accommodation of child anxiety.

Results: Mindful parenting can be measured in English-speaking mothers, using either a 5- or 6-factor, 29-item version of the IMP. These versions of the IMP operate similarly for mothers of children and infants. Child internalizing problems and related parent variables were best predicted by non-judgmental acceptance of parenting in mothers of children, and emotional self-awareness and non-reactivity in mothers of infants.

Conclusions: The IMP is a valid measure of mindful parenting in English-speaking mothers of children and infants. Mindful parenting predicts child internalizing problems and related parent variables, suggesting that mindful parenting programs could benefit families of children with internalizing problems, potentially by reducing parental experiential avoidance, unhelpful beliefs about or accommodation of child anxiety.

Keywords: IMP, mindful parenting, psychometric properties, experiential avoidance, parental beliefs, parental accommodation, child internalizing, children and infants

OPEN ACCESS

Edited by:
Mireia Orgilés, Miguel Hernández University of Elche, Spain

Reviewed by:
Eva Sophie Potharst, UvA Minds, Netherlands
Xiaoyi Hu, Beijing Normal University, China

****Correspondence:***
Virginia Burgdorf
virginia.burgdorf@sydney.edu.au

Specialty section:
This article was submitted to Psychology for Clinical Settings, a section of the journal Frontiers in Psychology

Received: *26 November 2020*
Accepted: *28 December 2020*
Published: *03 February 2021*

Citation:
Burgdorf V and Szabó M (2021) The Interpersonal Mindfulness in Parenting Scale in Mothers of Children and Infants: Factor Structure and Associations With Child Internalizing Problems. Front. Psychol. 11:633709. doi: 10.3389/fpsyg.2020.633709

INTRODUCTION

Mindful parenting has been defined as parenting with the aim of paying non-judgmental, non-reactive attention to each moment and interaction with the child (Kabat-Zinn and Kabat-Zinn, 1997). Mindful parents are thought to be able to regulate their parenting behaviors to better support their child's needs (Duncan et al., 2009). Indeed, a recent meta-analysis has shown that mindful parenting interventions are associated with reductions in parenting stress and children's externalizing and internalizing problems (Burgdorf et al., 2019). However, the mechanisms through which mindful parenting programs benefit parents and children are still largely unexplored, particularly in relation to child internalizing problems. To understand these mechanisms, a valid and reliable measurement of the dimensions of mindful parenting is necessary. The Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007; Duncan et al., 2009) is the most widely used instrument for that purpose. However, the IMP was originally developed for parents of adolescents (Duncan, 2007) and it has been investigated primarily in relation to child externalizing behaviors (e.g., Haydicky et al., 2015). To date, very little is known about the psychometric properties of the IMP in mothers of infants, or its relationship with parenting behaviors related to child internalizing problems. This study aimed to contribute to a better understanding of these issues.

The first instrument developed to measure the construct of mindful parenting was the 10-item IMP (Duncan, 2007). The IMP was subsequently expanded to a 31-item instrument, which was proposed to involve five dimensions (Duncan et al., 2009): Listening with Full Attention (LFA), Non-judgmental Acceptance of Self and Child (NJA-SC), Compassion for Self and Child (C-SC), Emotional Awareness of Self and Child (EA-SC), and Self-regulation in Parenting (SRP). Although the IMP has been widely used in research since its development, there are currently no published studies validating this proposed five-factor structure in an English-language population.

A small number of studies have explored the factor structure of translated versions of the IMP. The first such study tested a Dutch translation of the IMP in a Dutch community sample of mothers of 12–15-year-old ($M = 13.3$ years) adolescents (de Bruin et al., 2014). The results did not support Duncan et al.'s proposed 5-factor model. Instead, exploratory and confirmatory factor analyses suggested six factors. The primary difference between de Bruin et al.'s findings and Duncan et al.'s proposed model was that the parent- and child-focussed items relating to compassion, non-judgment and emotional awareness loaded on separate factors, resulting in the six empirically derived dimensions of (1) Listening with Full Attention (LFA), (2) Non-judgmental Acceptance of Parental Functioning (NJAPF), (3) Compassion for the Child (CC), (4) Emotional Awareness of the Child (EAC), (5) Emotional Non-reactivity in Parenting (ENRP), and (6) Emotional Awareness of Self (EAS). In addition, items 3 and 6 were excluded due to low factor loadings, resulting in a 29-item six-factor instrument (de Bruin et al.) Another translation of the IMP was tested in a Portuguese-speaking community group of mothers of 1–18-year-olds ($M = 5.86$ years) (Moreira and Canavarro, 2017). Exploratory and confirmatory factor analyses supported the deletion of items 3 and 6, but the findings concerning factor structure were somewhat different from the findings of de Bruin et al. (2014). Listening with Full Attention, Non-judgmental Acceptance of Parental Functioning, Compassion for the Child and Emotional Awareness of the Child contained largely the same items as the Dutch LFA, NJAPF, CC, and EAC factors. However, in this study a new Self-regulation in Parenting (SRP) factor emerged, combining the items from the Dutch ENRP and EAS factors, resulting in a 29-item, five-factor model. Translations of the IMP have also been tested in non-Western countries, including in Hong Kong Chinese parents of 2–19-year-olds (Lo et al., 2018) and Korean parents of 1–18 year-olds (Kim et al., 2018). Numerous items were deleted in both studies, suggesting that the English-language IMP may not easily translate to all other languages or cultures (Lo et al., 2018).

While the differences between the Asian and European studies' findings may be due to linguistic or cultural variations, the differences in the results reported by de Bruin et al. (2014) and Moreira and Canavarro (2017) could partly reflect the differing ages of the children involved in the two studies. Children have different parenting requirements at different developmental stages, such as physical proximity during infancy and autonomy support during adolescence (Karavasilis et al., 2003). It is therefore likely that mindful parenting behaviors differ at different child developmental stages, and separate mindful parenting programs have been offered for parents of infants and children (for example, Potharst et al., 2017). Such differences are not reflected in the current version of the IMP, however. Indeed, some IMP items have limited face validity for parents of pre-verbal children. For example, item 4 ("I listen carefully to my child's ideas, even when I disagree with them") may only be relevant for parents with children who can express themselves verbally. Therefore, the structure of the IMP should be examined separately in parents of pre-verbal infants and parents of children, to clarify whether the IMP operates equivalently for these two groups of parents.

In addition to child age, the nature of the child's difficulties is important when developing mindful parenting programs. To date, mindful parenting interventions have mainly been studied in parents of children with externalizing problems (for example, Haydicky et al., 2015) or with a range of mental health diagnoses (Emerson et al., 2019). They have not yet been studied in parents of children with only internalizing problems. Both parenting stress and over-reactive parenting have been identified as potential mediators of the relationship between mindful parenting and child externalizing problems (Burgdorf et al., 2019; Emerson et al., 2019). However, little is known about potential mediators between mindful parenting and child internalizing problems. Such mediators may include parental overprotectiveness (Yap et al., 2014), experiential avoidance (Emerson et al., 2019), and beliefs about child anxiety (Francis and Chorpita, 2010). Studies investigating which facets of mindful parenting are most closely related to child internalizing problems and associated parent variables are now needed. Such studies may help guide efforts to develop mindful parenting interventions more specifically targeting child internalizing.

Given the growing research interest in mindful parenting programs, the issues raised above regarding the IMP need to be addressed. The first aim of this study was to examine the fit of the model of mindful parenting proposed by Duncan et al. (2009), as well as the two empirically derived models reported by de Bruin et al. (2014) and Moreira and Canavarro (2017), using confirmatory factor analyses (CFAs). We conducted these analyses separately in parents of infants and parents of children, to explore possible differences in the factor structure of the IMP for these two groups of parents. The second aim of the study was to investigate the relationships between the IMP facets suggested by our CFAs, child internalizing problems, and related parent variables. We hypothesized that more mindful parenting would be related to lower child internalizing problems, as well as lower parenting stress, healthier beliefs and less accommodation regarding child anxiety, and lower parental experiential avoidance. We explored which dimensions of mindful parenting would be most strongly associated with these outcomes.

METHODS

Participants and Procedure

The study procedures were approved by the relevant institutional Human Research Ethics Committee (approval numbers 183/2019 and 440/2019). A total of 990 participants were recruited from the community, using targeted Facebook advertisements. The advertisement contained a link to the information statement and consent form, hosted on the secure data collection website Qualtrics. People were invited to take part if English was their primary language and they were a parent, or acting in the role of parent, to at least one child aged 0–20 years. There were no exclusion criteria. Participants with more than one child were asked to answer the parenting questions with regard to just one of their children.

From the 990 participants who provided informed consent, 765 participants completed the demographic data and the IMP (Duncan et al., 2009). To increase consistency with de Bruin et al. (2014) and Moreira and Canavarro (2017), we removed the data of fathers ($n = 41$) and the data of parents of children aged 19–20 years of age ($n = 8$), leaving data for the confirmatory factor analyses from 716 mothers (or other female caregivers) of children aged 0–18 years. The age of the mothers or other female caregivers of infants ranged from 22 to 56 years ($M = 32.25$; $SD = 4.79$) and their infants' mean age was 0.90 years ($SD = 0.78$). Mothers or other female caregivers of children were aged between 26 and 58 years ($M = 39.21$, $SD = 6.60$), and the mean age of their children was 8.23 years ($SD = 4.21$). **Table 1** contains further information on sample characteristics. A subset ($n = 245$) of these 716 mothers was also asked to complete a set of measures of child internalizing and related parent variables. Questionnaires were presented in random order to reduce order effects. This resulted in a different sample size completing the various questionnaires due to participant drop-out.

As shown in **Table 1**, there were several demographic differences between the two groups of mothers. Compared to mothers of children, more mothers of infants identified as a primary carer rather than as an equal carer, and families of infants generally had fewer children. A slightly higher proportion of mothers of infants also reported having previously been diagnosed with a mental health condition and having a history of practicing mindfulness. Amongst mothers who reported a history of mindfulness practice, slightly more mothers of children than infants reported that they currently practiced mindfulness at least monthly.

Measures

Demographics and Mindfulness Practice Questionnaire: demographic information was collected from participants on the variables presented in **Table 1**. Participants were also asked whether they had ever engaged in formal mindfulness or other form of meditation or contemplative practice. Response options were one or more of mindfulness, yoga, tai chi, other (participant to specify) or none. Participants who indicated some form of past formal practice were asked to indicate approximately how long they had engaged in that practice. For the purposes of the analyses in this paper, answers were dichotomized into "*<1 year*" and "*1 year or more*." For those currently practicing, the reported frequency of practice was dichotomized into "*less than monthly*" and "*monthly or more*." The data reported in this paper relate only to history, length and frequency of formal mindfulness practice.

Interpersonal Mindfulness in Parenting scale (IMP; Duncan, 2007, Duncan et al., 2009): the 31-item IMP measures mindfulness in the parenting context. The items are rated using a 5-point Likert-type scale, where 1 = *Never True*, 2 = *Rarely True*, 3 = *Sometimes True*, 4 = *Often True* and 5 = *Always True*. A total score is calculated by summing the items, with 14 items (1, 5, 9–15, 17, 19, 23, 26, and 29) reverse coded. Higher scores indicate more mindful parenting.

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997): The SDQ assesses child mental health in children aged 2–18 years. Five subscales relating to emotional problems, peer problems, behavioral problems, hyperactivity, and prosocial behavior are made up of five questions each, with 3-point response scales, where 0 = *Not true*, 1 = *Somewhat true* and 2 = *Certainly true*. In this study, we report only on the Emotional Problems and Peer Problems subscales, combined into an Internalizing Problems scale, where a higher score indicates more problems. The Internalizing Problems scale has good convergent and discriminant validity and internal consistency in general community samples (Goodman et al., 2010).

Depression Anxiety Stress Scales, 21 item version (DASS-21; Lovibond and Lovibond, 1995): the DASS-21 was used to measure parental distress. The DASS-21 is a self-report measure with three scales assessing the emotional states of depression, anxiety and stress. The items are answered on a 4-point Likert-type scale, ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much or most of the time*). Higher scores indicate greater distress. The psychometric properties of the DASS-21 have been reported to be excellent in several studies (e.g., Antony et al., 1998; Crawford and Henry, 2003).

Parental Attitudes, Beliefs and Understanding about Anxiety scale (PABUA; Wolk et al., 2016): the PABUA is a 21-item

TABLE 1 | Sample characteristics ($N = 716$).

	Parents of children, $n = 396$		Parents of infants, $n = 320$		Difference between groups	
	n	%	*n*	%	χ^2 *(df)*	Φ_C
Child gender					1.78 (2)	0.05
Male	161	50.3	192	48.6		
Female	201	50.9	159	49.7		
Other	2	0.5				
Parent relation to child					0.34 (1)	0.02
Biological mother	386	97.5	314	98.1		
Other female caregiver	10	2.5	6	1.9		
Caregiver role					9.57 (2)**	0.12
Primary carer	271	68.4	252	78.8		
Equal carer[a]	121	30.6	66	20.6		
Secondary carer	4	1.0	2	0.6		
No. children in family					205.16 (3)***	0.54
1	75	18.9	228	71.3		
2	198	50.0	70	21.9		
3	100	25.3	14	4.4		
≥4	23	5.8	8	2.5		
Parent country of residence					3.00 (1)	0.07
Australia	304	78.6	232	73.0		
Other	83	21.6	86	29.1		
Parent highest level of education					0.02 (2)	0.01
Post-graduate or Bachelor degree	290	73.8	236	73.8		
Associate degree or vocational training	53	13.5	44	13.8		
Secondary school or other	50	12.8	40	12.5		
Parent previous mental health diagnosis					5.36 (1)*	0.09
No	248	62.6	173	54.1		
Yes	148	37.4	147	45.9		
History of formal mindfulness practice					4.74 (1)*	0.08
Yes	144	36.4	142	44.4		
No	252	63.6	178	55.6		
Length of mindfulness practice					2.35 (1)	0.08
<1 year	64	46.0	68	48.9		
≥1 year	75	54.0	71	51.1		
Frequency of mindfulness practice					4.85 (1)*	0.11
<Monthly	50	36.0	80	57.6		
≥Monthly	89	64.0	59	42.4		

*Φ_C is Cramer's V effect size, where 0.1–0.3 is a small effect, 0.3–0.5 a moderate effect, and >0.5 a large effect (Cohen, 1988); [a]Equal carer is a parent who reports sharing the care of their child approximately equally with another person; *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.*

self-report measure of a parent's beliefs and attitudes about their child's anxiety, consisting of three scales. Overprotection measures parent beliefs about protecting their child from anxiety, with items such as "*It is important that I protect my child from feeling anxious.*" Approach measures beliefs regarding child autonomy and exposure to anxiety, for example "*A way to help my child feel less anxious is to encourage him/her to face his/her fears.*" Finally, Distress measures parent distress in connection with their child's anxiety, for example "*It is hard for me to be with my child when he/she is nervous.*" Items 4, 12, 16, and 21, which form the Approach scale, are reverse scored. The items are answered on a 5-point scale, from 1 = *Strongly disagree* to 5 = *Strongly agree*, with higher scores indicative of less helpful beliefs about anxiety. The PABUA has good convergent and divergent validity, with adequate to good internal consistency (Wolk et al., 2016).

Parental Acceptance and Action Questionnaire (PAAQ; Cheron et al., 2009): the PAAQ is a 15-item self-report measure of experiential avoidance in parenting. Items are rated on a 7-point scale from 1 = *Never true* to 7 = *Always true*, with higher scores indicating more experiential avoidance. Items 1, 5–7, 10, and 11 are reverse scored. The items are summed to create a parental experiential avoidance total score, which measures a parent's unwillingness to witness their child's negative

feelings and their inability to manage their own reactions to those negative feelings. Data regarding the PAAQ's concurrent validity and adequate internal consistency have been reported by Cheron et al. (2009).

Parental Accommodation Scale (PAS; Meyer et al., 2018): The 5-item PAS-Behavior scale measures the frequency of parental behaviors aimed at helping their child to lessen or avoid anxiety, with items such as "*I help my child avoid things or perform behaviors so that he or she feels better immediately.*" The items are answered on a 4-point scale ranging from 0 = *Never/almost never* to 3 = *Always/almost always*. Higher scores indicate more unhelpful accommodating behaviors. Meyer et al. (2018) demonstrated the PAS-Behavior scale's convergent validity and good internal consistency.

The parents also completed three other questionnaires that were not included in the current report. The internal consistency (Cronbach's alpha) of the child and parent outcome measures used in this study, other than for the PABUA Approach scale, are reported below in **Table 5**. The PABUA Approach scale was excluded from the analyses due to poor internal consistency ($\alpha = 0.28$ for mothers of infants, $\alpha = 0.41$ for mothers of children).

Statistical Analyses

The confirmatory factor analyses were conducted using AMOS version 25. To check whether the data met the assumption of multivariate normality of distribution underlying structural equation modeling, we screened for multivariate kurtosis and outliers. In both groups of mothers, screening revealed mild multivariate kurtosis and no clear outliers based on an examination of the squared Mahalanobis distance for each case. Goodness-of-fit was assessed against several indices in addition to the chi-square test. Good and adequate fit were indicated, respectively, by normed chi-square (X^2/df) $\leq$ 2 and $\leq$5, a comparative fit index (CFI) $\geq$0.95 and $\geq$0.90, root-mean-square error of approximation (RMSEA) $\leq$0.05 and $\leq$0.08, and standardized root mean square residual (SRMR) $\leq$0.08 and $\leq$0.10 (Byrne, 2010). We then used SPSS version 26 to conduct a series of simultaneous multiple regression analyses to determine the unique contribution of individual IMP subscales to the prediction of scores on measures of child internalizing and related parent variables.

RESULTS

Confirmatory Factor Analysis

We began by testing the fit of the Duncan et al. (2009), de Bruin et al. (2014), and Moreira and Canavarro (2017) models in mothers of children. The fit indices are in **Table 2**. Based on all the indices used, Duncan et al.'s proposed model (Model C.1) was a poor fit to the data. The factor loadings for items 3 and 6 were low (0.07 and 0.21, respectively) and the loading for item 3 was non-significant. Due to the poor model fit, we did not examine modification indices for this model.

Next, we examined the fit of the de Bruin et al. model. We began by specifying a six-factor model containing all 31 IMP items (Model C.2), to check whether items 3 and 6 remained problematic. The factor loadings for items 3 (0.08) and 6 (0.04) were again low and non-significant. We therefore excluded those items and specified a 29-item six-factor model (Model C.3). The fit indices ranged from adequate to good, and the fit improved compared to Model C.2. The modification indices for Model C.3 suggested covariance between the errors for two items loading on NJAPF (items 18 and 20). Because both items were related to acceptance of parenting mistakes, we decided to allow these errors to covary (Model C.4). Model fit significantly improved and the fit indices ranged from adequate to good. The modification indices for Model C.4 indicated a cross-loading for item 24, on the CC factor. Item 24 refers to the parent paying close attention to the child when together. As this is similar to several CC items which refer to the parent being attentive to the child in different ways, we made this modification. The revised model (Model C.5) was a reasonably good fit to the data and an improvement on Model C.4. There were no further substantial or theoretically justified error covariances or model misspecifications indicated by the modification indices.

We then tested the 29-item, five-factor Moreira and Canavarro model (Model C.6) in mothers of children. Model C.6 was an adequate to good fit to the data. All factor loadings were significant. The loading for item 10 was 0.36, with all others >0.56. Like the de Bruin et al. model, modification indices suggested an error covariance for items 18 and 20. When this modification was made (Model C.7), the fit improved. The modification indices for Model C.7 suggested the same cross-loading for item 24 on CC. When that cross-loading was allowed, the re-specified model (Model C.8) was again an improvement on the previous model. For Model C.8, modification indices suggested covariance between the errors for items 2 and 21, which both load on the SRP factor. As these items are similar and both relate to pausing before acting, we allowed this error covariance. This resulted in Model C.9, whose indices indicated an adequate to good fit to the data and were a significant improvement on the previous model. No further meaningful modifications were indicated.

In mothers of infants, we followed the same process as set out above. **Table 3** contains the fit indices for mothers of infants. The Duncan et al. model (Model I.1) exhibited a poor fit. The factor loadings of items 3 and 6 were low (both 0.03) and non-significant, and the loading for item 10 was low (0.24). We did not check modification indices for this model, due to the poor fit.

We then tested the de Bruin et al. model (Model I.2). The covariance matrix indicated a reasonably good fit to the observed matrix. The loadings for items 3 and 6 were low (both 0.10) and non-significant. The factor loading for item 10 was also low (0.17), but significant ($p < 0.001$). Therefore, items 3 and 6 were excluded and the model re-specified with 29 items (Model I.3). Modification indices suggested error covariances that differed from those found in the sample of mothers of children. For Model I.3, covariance between the errors for CC items 4 and 28, which refer to listening to the child's point of view, was suggested. These errors were allowed to covary, resulting in a significantly

TABLE 2 | Fit indices from the confirmatory factor analyses, for mothers of children ($n = 396$).

	Model	X^2	*df*	X^2/df	CFI	RMSEA	90% CI for RMSEA	SRMR	Change from previous model (ΔX^2)
C.1	Duncan et al. (2009) 31 items	1,698.70**	424	4.01	0.750	0.087	[0.083, 0.092]	0.1027	–
C.2	de Bruin et al. (2014) 31 items	944.81**	419	2.26	0.897	0.056	[0.052, 0.061]	0.0686	–
C.3	de Bruin et al. (2014) 29 items (excluding items 3 and 6)	764.36**	362	2.11	0.919	0.053	[0.048, 0.058]	0.0592	180.45 (57)*
C.4	de Bruin et al. (2014) 29 items (covary e18 and e20)	733.53**	361	2.03	0.925	0.051	[0.046, 0.056]	0.0598	30.83 (1)*
C.5	de Bruin et al. (2014) 29 items (cross-load item 24)	693.41**	360	1.93	0.933	0.048	[0.043, 0.054]	0.0575	40.12 (1)*
C.6	Moreira and Canavarro (2017) 29 items	835.13**	367	2.28	0.906	0.057	[0.052, 0.062]	0.0623	–
C.7	Moreira and Canavarro (2017) 29 items (covary e18 and e20)	808.74**	366	2.21	0.911	0.055	[0.050, 0.060]	0.0628	26.39 (1)*
C.8	Moreira and Canavarro (2017) 29 items (cross-load item 24)	780.16**	365	2.14	0.916	0.054	[0.048, 0.059]	0.0622	28.58 (1)*
C.9	Moreira and Canavarro (2017) 29 items (covary e2 and e21)	743.53**	364	2.04	0.924	0.051	[0.046, 0.057]	0.0605	36.36 (1)*

*CFI is Comparative fit index; RMSEA is root-mean-square error of approximation; SRMR is standardized root mean square residual; *p < 0.01; **p < 0.001.*

TABLE 3 | Fit indices from the confirmatory factor analyses, for mothers of infants ($n = 320$).

	Model	X^2	*df*	X^2/df	CFI	RMSEA	90% CI for RMSEA	SRMR	Change from previous model (ΔX^2)
I.1	Duncan et al. (2009) 31 items	1437.17**	424	3.39	0.728	0.087	[0.082, 0.091]	0.0953	–
I.2	de Bruin et al. (2014) 31 items	791.75**	419	1.89	0.900	0.053	[0.047, 0.058]	0.0705	–
I.3	de Bruin et al. (2014) 29 items (excluding items 3 and 6)	669.27**	362	1.85	0.916	0.052	[0.045, 0.058]	0.0662	122.48 (57)*
I.4	de Bruin et al. (2014) 29 items (covary e4 and e28)	649.22**	361	1.80	0.921	0.050	[0.044, 0.056]	0.0662	20.05 (1)*
I.5	de Bruin et al. (2014) 29 items (covary e4 and e7)	630.76**	360	1.75	0.926	0.049	[0.042, 0.055]	0.0660	18.46 (1)*
I.6	Moreira and Canavarro (2017) 29 items	705.06**	367	1.92	0.907	0.054	[0.048, 0.060]	0.0661	–
I.7	Moreira and Canavarro (2017) 29 items (covary e14 and e29)	666.45**	366	1.82	0.918	0.051	[0.045, 0.057]	0.0649	38.61 (1)*
I.8	Moreira and Canavarro (2017) 29 items (covary e4 and e28)	645.71**	365	1.77	0.923	0.049	[0.043, 0.055]	0.0649	20.74 (1)*
I.9	Moreira and Canavarro (2017) 29 items (covary e4 and e7)	626.75**	364	1.72	0.928	0.048	[0.041, 0.054]	0.0646	18.96 (1)*

*CFI is Comparative fit index; RMSEA is root-mean-square error of approximation; SRMR is standardized root mean square residual; *p < 0.01; **p < 0.001.*

TABLE 4 | Standardized factor loadings for 29-item de Bruin et al. (2014) model, for mothers of children (Model C.5) and infants (Model I.5).

		Mothers of children (n = 396)						Mothers of infants (n = 320)					
	Item	**LFA**	**NJAPF**	**EAC**	**CC**	**EAS**	**ENRP**	**LFA**	**NJAPF**	**EAC**	**CC**	**EAS**	**ENRP**
1	Listening to my child with one ear	0.72						0.65					
9	Rush through activities without being attentive	0.79						0.69					
13	Easily distracted when with my child	0.77						0.72					
19	Not listening, busy thinking about other things	0.78						0.76					
24	Pay close attention to child when together	0.54			0.32			0.72					
15	Hard on myself regarding parenting mistakes		0.70						0.75				
17	Blame myself when times are difficult with child		0.69						0.76				
18	Accept parenting mistakes and move on		0.60						0.63				
20	Give myself a break if I regret my parenting actions		0.55						0.68				
23	Criticize myself for my parenting		0.84						0.76				
26	Think other parents have it easier with parenting		0.64						0.62				
12	Hard to tell what my child is feeling			0.73						0.62			
22	Find it easy to tell when my child is worried			0.74						0.69			
30	Can tell what my child is feeling			0.85						0.77			
4	Listening carefully to child's ideas				0.64						0.37		
7	Allow my child to express their feelings				0.57						0.62		
25	Kind to my child when they upset				0.65						0.67		
27	Nurturing with child when they having a difficult time				0.69						0.74		
28	Try to understand child's point of view				0.71						0.68		
31	Patient with child when they having a hard time				0.70						0.77		
2	Notice how I feel before I take action					0.66						0.65	
8	When upset, I calmly tell child how I feel					0.65						0.49	
16	Try to keep my emotions in balance when upset					0.68						0.72	
21	Pause before reacting, in difficult situations					0.77						0.71	
5	React too quickly to my child						0.71						0.67
10	Difficulty accepting child's growing independence						0.34						0.16
11	Only realize later that feelings affect parenting decisions						0.64						0.68
14	Do things I regret when my child misbehaves						0.77						0.76
29	Get carried away with my feelings when child upsets me						0.76						0.83
	Cronbach's alpha for scale:	0.87	0.84	0.81	0.82	0.78	0.77	0.83	0.85	0.73	0.81	0.73	0.73

LFA is the Listening with Full Attention scale of the Interpersonal Mindfulness in Parenting questionnaire (IMP); NJAPF is the Non-judgmental Acceptance of Parental Functioning scale of the IMP; EAC is the Emotional Awareness of the Child scale of the IMP; CC is the Compassion for the Child scale of the IMP; EAS is the Emotional Awareness of the Self scale of the IMP; ENRP is the Emotional Non-reactivity in Parenting scale of the IMP.

improved fit (Model I.4). The modification indices for Model I.4 then suggested covariance between a similar pair of items loading on CC. Items 4 and 7 both relate to allowing a child to express themselves, even in circumstances when this might be difficult for the parent. This modification was made, leading to a further improvement (Model I.5). The modification indices for Model I.5 did not indicate any substantial error covariances or misspecifications to the model.

TABLE 5 | Correlations between IMP subscales, demographic and mindfulness practice variables, and outcome variables, for mothers of children and infants.

Predictors	Mothers of children aged 3–18 years[a]						Mothers of infants aged 0–2 years				
	SDQ Internalizing	DASS Stress	PABUA Over–protection	PABUA Distress	PAAQ Total	PAS Behavior	DASS Stress	PABUA Over–protection	PABUA Distress	PAAQ Total	PAS Behavior
	α = 0.70 –0.87[b]	α = 0.85	α = 0.86	α = 0.71	α = 0.83	α = 0.77	α = 0.87	α = 0.88	α = 0.57	α = 0.81	α = 0.78
LFA	−0.21**	−0.29***	−0.14	−0.35***	−0.39***	−0.31***	−0.26*	0.03	−0.30*	−0.25	−0.06
CC	−0.17*	−0.15*	−0.04	−0.45***	−0.47***	−0.12	−0.12	−0.06	−0.35**	−0.53***	−0.02
NJAPF	−0.40***	−0.50***	−0.34***	−0.48***	−0.69***	−0.44***	−0.53***	−0.20	−0.38**	−0.65***	−0.29*
EAC	−0.29***	−0.14	−0.01	−0.39***	−0.30***	−0.18*	0.02	−0.02	−0.19	−0.24	−0.02
ENRP	−0.32***	−0.40***	−0.16	−0.46***	−0.58***	−0.26**	−0.36***	−0.13	−0.52***	−0.59***	−0.35**
EAS	−0.28***	−0.24**	−0.09	−0.38***	−0.45***	−0.15	−0.28*	−0.13	−0.37**	−0.57***	−0.31*
Parent age	−0.01	−0.29***	−0.14	−0.08	−0.09	−0.20*	−0.18	0.02	−0.06	−0.17	−0.13
Child age	0.24**	−0.10	−0.10	0.00	0.02	−0.07	−0.06	−0.06	−0.15	−0.35**	−0.09
Child gender[c]	0.12	0.07	0.14	0.14	0.11	0.22**	−0.10	0.06	−0.06	−0.08	0.03
Mental health[d]	0.24*	0.26***	0.16*	0.11	0.27***	0.27***	0.30**	0.07	0.00	0.05	0.12
History of practice[e]	0.07	0.09	−0.08	−0.15	−0.03	0.07	0.00	−0.09	−0.23	−0.13	0.02
Length of practice[f]	−0.14	−0.06	0.08	−0.20	−0.15	0.01	−0.24	−0.13	−0.15	−0.24	−0.30
Frequency of practice[g]	0.03	−0.08	0.01	−0.16	−0.09	−0.17	−0.24	−0.03	−0.02	0.24	0.02

*[a]For SDQ Internalizing, this group comprises mothers of children aged 2–18 years (as SDQ data not available for infants under 2 years); [b]Cronbach's alpha is reported separately for the different age categories of SDQ, that is, 0.70 (2–4 years), 0.71 (5–10 years), and 0.87 (11–17 years). No alpha could be calculated for the SDQ (18 years) as there was only 1 mother of a child aged 18 years; [c]0 = females and 1 = males; [d]0 = no previous mental health diagnosis and 1 = previous mental health diagnosis; [e]0 = no history of mindfulness practice and 1 = some history of mindfulness practice; [f]0 = <1 year history of mindfulness practice and 1 = one or more years history of mindfulness practice; [g]0 = currently practicing less than monthly and 1 = currently practicing monthly or more; SDQ Internalizing is the Internalizing scale of the Strengths and Difficulties Questionnaire; DASS Stress is the Stress scale of the Depression Anxiety Stress Scales; PABUA Overprotection is the Overprotection scale of the Parental Attitudes, Beliefs, and Understanding of Anxiety scale; PABUA Distress is the Distress scale of the Parental Attitudes, Beliefs, and Understanding of Anxiety scale; PAAQ Total is the Total scale from the Parental Acceptance and Action Questionnaire; PAS Behavior is the Behavior scale of the Parental Accommodation Scale; LFA is the Listening with Full Attention scale of the Interpersonal Mindfulness in Parenting questionnaire (IMP); CC is the Compassion for the Child scale of the IMP; NJAPF is the Non-judgmental Acceptance of Parental Functioning scale of the IMP; EAC is the Emotional Awareness of the Child scale of the IMP; ENRP is the Emotional Non-reactivity in Parenting scale of the IMP; EAS is the Emotional Awareness of the Self scale of the IMP; *p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.*

Last, we examined the the 29-item Moreira and Canavarro model in mothers of infants (Model I.6). Model I.6 was a reasonably good fit. Item 10 had the lowest factor loading (0.28), with all other loadings at least 0.44. All loadings were significant. The modification indices for Model I.6 indicated covariance between the errors for items 14 and 29. As these items both load on the SRP factor and refer to parental over-reactivity to the child when upset, they were allowed to covary. With the model re-specified (Model I.7), the fit improved. Modification indices for Model I.7 then suggested covarying errors for CC items 4 and 28. When this modification was made, the fit improved (Model I.8). For Model I.8, the only substantial change suggested was the covariance of the errors for CC items 4 and 7. With this modification, the fit of the revised model (Model I.9) improved and exhibited a reasonably good fit to the data. No further modifications were warranted.

For both groups of mothers, fewer modifications needed to be made to the de Bruin et al. model to achieve optimum fit. The principal difference between the Moreira and Canavarro and de Bruin et al. models is that the items loading on the Dutch EAS and ENRP factors are combined into the single SRP factor in the Moreira and Canavarro model. Although the Dutch EAS and ENRP factors are closely related, they tap theoretically distinct aspects of parenting, that is emotional self-awareness and non-reactivity. We therefore decided to use the de Bruin et al. model in all following analyses to identify whether these two factors have unique predictive value. The factor loadings for the de Bruin et al. model for mothers of children and infants (Models C.5 and I.5), and the Cronbach's alpha for each scale, are presented in **Table 4**.

Relationships Between IMP and Demographic and Mindfulness Practice Variables

There were no significant relationships (all $ps > 0.05$) between IMP scores and the background demographic variables, except for small positive associations between IMP scores and parent or child age. These correlations were very small and likely to have no practical significance (e.g., $r = 0.13$, $p = 0.008$ between parent age and IMP score amongst mothers of children). IMP scores were significantly associated with parent mental health for both groups. Mothers of children without a previous mental health

diagnosis reported more mindful parenting ($M = 103.89$, $SD = 12.75$) than those with a previous diagnosis ($M = 98.97$, $SD = 12.75$; $t = -3.72$, $p < 0.001$). The same pattern was found amongst mothers of infants, with more mindful parenting in those without a previous diagnosis ($M = 107.67$, $SD = 12.44$), than in those with one ($M = 104.85$, $SD = 12.43$; $t = -2.02$, $p = 0.044$).

IMP scores were also related to some aspects of mindfulness practice. Amongst mothers of children, there was no difference in IMP scores based on history of formal mindfulness practice or the length of that practice history (both *p*s >0.05). However, IMP scores were related to frequency of current practice, with mothers who reported at least monthly practice having higher scores ($M = 104.92$, $SD = 13.03$) than those practicing less than monthly ($M = 98.28$, $SD = 11.36$; $t = 3.02$, $p = 0.003$). In mothers of infants, IMP scores were higher amongst mothers with a history of formal mindfulness practice ($M = 108.28$, $SD = 12.15$), compared to those without that history ($M = 104.85$, $SD = 12.60$; $t = -2.46$, $p = 0.015$), and amongst those who had practiced for more than 1 year ($M = 111.04$, $SD = 12.37$), compared to those who had practiced for less than a year ($M = 105.71$, $SD = 11.36$; $t = -2.65$, $p = 0.009$). However, IMP scores did not differ according to frequency of current practice ($p > 0.05$) in this group.

Relationships Between IMP and Child and Parent Outcome Variables

Correlations between demographic and mindfulness practice variables, and child and parent outcome variables, were calculated to determine whether any of these variables should be included as control variables in the regression analyses. These correlations are shown in **Table 5**. Demographic or mindfulness practice variables were included as control variables if the correlations between those variables and the child or parent outcome variables were significant, or where the correlation coefficient was 0.25 or more. We included control variables based on the size of the correlation coefficient as well as statistical significance because of the smaller sample size of mothers of infants.

Tables 6, **7** detail the results of the regression analyses for child internalizing and the parent outcome variables. Child internalizing problems (for children aged 2–18) were uniquely predicted by the NJAPF and EAC facets, when all other variables were held constant in the equation. For mothers of children, all parent outcomes had a unique association with NJAPF. Parent distress regarding child anxiety was also predicted by EAC and CC, and parental experiential avoidance was also predicted by CC. A different pattern was found for mothers of infants. Parent stress was uniquely predicted by NJAPF, parent distress regarding child anxiety was predicted by ENRP, experiential avoidance by NJAPF and EAS, and accommodation of child anxiety by EAS and CC.

DISCUSSION

The Structure of Mindful Parenting

This study sought to examine the structure of mindful parenting, to determine whether it differed for parents of infants and parents of children, and to investigate the relationships between the facets of mindful parenting, child internalizing, and parent variables related to child internalizing. In relation to factor structure, the model proposed by Duncan et al. (2009) was a poor fit in both groups of mothers. In contrast, the de Bruin et al. (2014) and Moreira and Canavarro (2017) models were an adequate to good fit in both mothers of children and infants. Amongst mothers of children, the slightly better fit indices and lower number of modifications required suggested the de Bruin et al. model was a marginally better fit to the data. Amongst mothers of infants, the indices showed both models to be a reasonably good fit, although the de Bruin et al. model again required fewer modifications to achieve best fit. The divergence of fit between the proposed Duncan et al. model on the one hand, and the de Bruin et al. and Moreira and Canavarro models on the other, supports the separation of the parent- and child-focused items relating to compassion, non-judgment, and emotional awareness onto separate factors. This separation of parent- and child-focused items in an English-speaking group of mothers confirms that this is a reflection of the construct of mindful parenting rather than an artifact of the translation process or a reflection of cultural differences. Our results also confirm that items 3 and 6 should be deleted from the IMP, as suggested by de Bruin et al. (2014) and Moreira and Canavarro (2017).

The fit of the de Bruin et al. (2014) and Moreira and Canavarro (2017) models in both groups of mothers also shows that the construct of mindful parenting is similar for mothers of children and mothers of infants. One potential issue regarding the operation of the IMP in parents of pre-verbal infants was that some items appeared to have limited face validity. For example, the wording of items 4 ("I listen carefully to my child's ideas, even when I disagree with them") and 28 ("I try to understand my child's point of view, even when his/her opinions do not make sense to me") appears relevant only to parents of children who can verbally express ideas or opinions. For item 28, the loadings were very similar across mothers of children (0.71) and infants (0.68). For item 4, although the loading for mothers of infants (0.37) was lower than for mothers of children (0.64), it was significant. In addition, amongst mothers of infants but not children, the errors for items 4 and 28 were correlated. This pattern of factor loadings, and the error covariance for mothers of infants only, suggests that even though infants do not have sufficient verbal skills to express their opinions, these items are measuring an underlying understanding by mothers that infants can communicate in other ways, such as through displays of emotion. Mothers therefore appear to interpret these items in a manner that is applicable to the developmental age of their child.

There was also some variation between the two groups of mothers in the size of the loadings for item 10 ("I have difficulty accepting my child's growing independence"). This item had a loading on the ENRP facet of only 0.16 for mothers of infants, and only 0.34 for mothers of children. As the group of mothers of children had a broader range of children, including adolescents in the process of gaining independence from their parents (Moretti and Peled, 2004), it is expected that item 10 would be more relevant to those mothers. However, both loadings were still low, raising the question as to whether it is a good indicator of

TABLE 6 | Regression analysis of demographic and mindful parenting scale predictors of child internalizing problems (SDQ Internalizing), for mothers of children aged 2–18 years ($n = 163$).

	Model 1				Model 2			
	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2
	0.09***				0.26***			
Child age		0.25***	3.27	0.06		0.21**	3.01	0.04
Mental health[a]		0.19**	2.54	0.04		0.10	1.32	0.01
LFA						0.01	0.10	0.00
CC						0.10	1.06	0.01
EAC						−0.18*	−2.20	0.02
NJAPF						−0.30***	−3.24	0.05
ENRP						−0.06	−0.48	0.00
EAS						−0.08	−0.77	0.00

[a]*0 = no previous mental health diagnosis and 1 = previous mental health diagnosis; LFA is the Listening with Full Attention scale of the Interpersonal Mindfulness in Parenting questionnaire (IMP); CC is the Compassion for the Child scale of the IMP; EAC is the Emotional Awareness of the Child scale of the IMP; NJAPF is the Non-judgmental Acceptance of Parental Functioning scale of the IMP; ENRP is the Emotional Non-reactivity in Parenting scale of the IMP; EAS is the Emotional Awareness of the Self scale of the IMP; *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.*

non-reactivity. This item was also problematic in the unpublished validation of the 10-item IMP (Duncan, 2007), where it showed low correlations with other items. Further investigations could help clarify whether item 10 should be retained in the IMP.

Relationship Between Mindful Parenting, Child Internalizing, and Parent Outcome Variables

The regression analyses conducted in this study show that several facets of mindful parenting predict child internalizing problems and related parent outcomes, after controlling for demographic and mindfulness practice variables. Child internalizing problems were predicted by the NJAPF and EAC facets, when all other variables in the equation were held constant. Children have less internalizing problems if their mothers are less judgmental about their own parental functioning. Previously, adolescents have been found to be less anxious and depressed if their parents are less judgmental about themselves as parents (Geurtzen et al., 2015), so the present results confirm this relationship in mothers of a wider age range of children. Mothers with greater emotional awareness regarding their child also had children with less internalizing problems. From the child's perspective, having emotionally competent parents facilitates adaptive processing of emotional experience (Morris et al., 2017). There are various ways in which being more accepting of one's own parental functioning and more emotionally aware could result in children with less internalizing problems. Emotionally competent parents model helpful emotion regulation strategies, including acceptance, thereby providing opportunities for their children to learn these behaviors (Morris et al., 2017). In turn, children with better emotion regulation skills have fewer internalizing problems (Suveg et al., 2011). However, the cross-sectional nature of the data means that alternative explanations are possible. For example, having an anxious child who avoids certain activities like engaging in sports or interacting with other children at school or in social settings may cause a parent to negatively judge their abilities as a parent. Finally, it is also possible that being more judgmental regarding one's own parental functioning or less emotionally aware regarding one's child indicate an underlying predisposition to anxiety, such as negative affect (Barlow, 2000), which predicts child internalizing (Drake and Ginsburg, 2012).

Parent stress was predicted by NJAPF in both mothers of children and infants. Mothers are less stressed if they are less judgmental regarding their own functioning as a parent. These results are consistent with an earlier study by Moreira and Canavarro (2018), who found that non-judgmental acceptance mediates the relationship between self-critical rumination and parenting stress. It seems likely that parents who judge their own performance as a parent less harshly would have lower levels of general stress because they would be less likely to try to meet overly high standards of parenting and be less punishing of themselves for perceived failures to meet those standards (Moreira and Canavarro, 2018).

Parent beliefs and attitudes about child anxiety were predicted by NJAPF, EAC, and CC in mothers of children, but only by ENRP in mothers of infants. Specifically, mothers of children are less likely to believe they need to protect their child from anxiety and are less distressed by their child's anxiety, if they are less judgmental regarding their own functioning as a parent and more emotionally aware and compassionate regarding their child. Parents who find it difficult to understand their child's emotions, including anxiety, may experience distress because they lack skills to manage their child's or their own reactions to that emotional state (Izard et al., 2011). This may also reflect an understanding that anxiety is a normal emotion that everyone will experience at times and, as such, is not something that parents need to guard against in their children. In contrast, mothers of infants experienced less distress regarding child anxiety if they were less emotionally reactive in their parenting. Emotional self-regulation may be important in helping parents of infants to cope with any distress associated with their infant, because the limited capacity

TABLE 7 | Regression analyses of mindful parenting scale predictors of parent outcome variables, for mothers of infants and children.

	Mothers of children aged 3–18 years								Mothers of infants aged 0–2 years							
	Model 1				Model 2				Model 1				Model 2			
	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2
DASS Stress					***n* = 167**								***n* = 75**			
Predictors:	0.13***				0.32***				0.09**				0.38***			
Parent age		−0.26***	−3.56	0.07		−0.19**	−2.69	0.03		–	–	–		–	–	–
Mental health[a]		0.22**	2.94	0.05		0.11	1.63	0.01		0.30**	2.67	0.09		0.20*	2.04	0.04
LFA						−0.06	−0.69	0.00						−0.14	−1.21	0.01
CC						0.10	1.12	0.01						0.15	1.12	0.01
EAC						−0.04	−0.58	0.00						0.15	1.36	0.02
NJAPF						−0.30***	−3.36	0.05						−0.41***	−3.55	0.12
ENRP						−0.20	−1.85	0.01						−0.11	−0.78	0.01
EAS						0.00	−0.01	0.00						−0.16	−1.13	0.01
PABUA Overprotection					***n* = 156**								***n* = 66**			
Predictors:	0.03*				0.13**				0.03*							
Mental health[a]		0.16*	1.97	0.02		0.05	0.65	0.00		–	–	–				
LFA						−0.07	−0.68	0.00		0.14	0.92	0.01				
CC						0.05	0.51	0.00		0.04	0.19	0.00				
EAC						0.05	0.55	0.00		0.00	0.01	0.00				
NJAPF						−0.36***	−3.56	0.07		−0.19	−1.24	0.02				
ENRP						0.06	0.48	0.00		−0.05	−0.25	0.00				
EAS						0.01	0.08	0.00		−0.11	−0.61	0.01				
PABUA Distress					***n* = 156**								***n* = 66**			
Predictors:	0.36***								0.29**							
LFA		0.00	−0.03	0.00						−0.05	−0.37	0.00				
CC		−0.21*	−2.37	0.02						−0.09	−0.56	0.00				
EAC		−0.20**	−2.68	0.03						0.04	0.31	0.00				
NJAPF		−0.31***	−3.68	0.06						−0.14	−1.05	0.01				
ENRP		−0.10	0.98	0.00						−0.37*	−2.29	0.06				
EAS		0.01	0.05	0.00						−0.04	−0.22	0.00				
PAAQ Total					***n* = 148**								***n* = 64**			
Predictors:	0.07***				0.57***				0.12**				0.67***			
Child age										−0.35***	−2.90	0.12		−0.27***	−3.40	0.07
Mental health[a]		0.27***	3.33	0.07		0.09	1.61	0.01					–	–	–	
LFA						0.03	0.44	0.00						0.17	1.90	0.02
CC						−0.22**	−2.91	0.03						−0.21	−1.90	0.02
EAC						−0.06	−0.87	0.00						0.07	0.79	0.00
NJAPF						−0.50***	−6.71	0.14						−0.41***	−4.45	0.12
ENRP						−0.15	−1.62	0.01						−0.21	−1.89	0.02
EAS						−0.01	−0.12	0.00						−0.24*	−2.11	0.03
PAS Behavior					***n* = 143**								***n* = 59**			
Predictors:	0.13***				0.28***				0.03				0.27*			
Parent age		−0.15	−1.88	0.02		−0.07	−0.94	0.00		–	–	–		–	–	–
Child gender[b]		0.19*	2.32	0.03		0.15*	2.03	0.02		–	–	–		–	–	–
Mental health[a]		0.23**	2.87	0.05		0.12	1.58	0.01		–	–	–		–	–	–

(Continued)

TABLE 7 | Continued

	Mothers of children aged 3–18 years								Mothers of infants aged 0–2 years							
	Model 1				Model 2				Model 1				Model 2			
	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2	R^2	β	*t*	sr^2
Length of practice[c]																
<1 year		–	–	–		–	–	–		0.09	0.62	0.01		0.12	0.84	0.01
≥1 year		–	–	–		–	–	–		−0.12	−0.82	0.01		−0.02	−0.11	0.00
LFA						−0.18	−1.85	0.02						0.10	0.72	0.01
CC						0.12	1.14	0.01						0.35*	2.02	0.06
EAC						−0.10	−1.24	0.01						0.06	0.39	0.00
NJAPF						−0.35***	−3.50	0.07						−0.11	−0.79	0.01
ENRP						0.03	0.26	0.00						−0.34	−1.90	0.05
EAS						0.03	0.25	0.00						−0.35*	−1.97	0.06

*[a]0 = no previous mental health diagnosis and 1 = previous mental health diagnosis; [b]0 = females and 1 = males; [c]0 = <1 year history of mindfulness practice and 1 = one or more years history of mindfulness practice; DASS Stress is the Stress scale of the Depression Anxiety Stress Scales; PABUA Overprotection is the Overprotection scale of the Parental Attitudes, Beliefs, and Understanding of Anxiety scale; PABUA Distress is the Distress scale of the Parental Attitudes, Beliefs, and Understanding of Anxiety scale; PAAQ Total is the Total scale from the Parental Acceptance and Action Questionnaire; PAS Behavior is the Behavior scale of the Parental Accommodation Scale; LFA is the Listening with Full Attention scale of the Interpersonal Mindfulness in Parenting questionnaire (IMP); CC is the Compassion for the Child scale of the IMP; EAC is the Emotional Awareness of the Child scale of the IMP; NJAPF is the Non-judgmental Acceptance of Parental Functioning scale of the IMP; ENRP is the Emotional Non-reactivity in Parenting scale of the IMP; EAS is the Emotional Awareness of the Self scale of the IMP; *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.*

of infants to regulate themselves means they must rely on parents' regulatory abilities (Rutherford et al., 2015).

Parental experiential avoidance was predicted by NJAPF and CC in mothers of children and NJAPF and EAS in mothers of infants. Mothers of children are less avoidant if they are less judgmental regarding their parenting and more compassionate with their child. Experientially avoidant parents have difficulty experiencing their own thoughts and emotions in relation to their child's negative emotions (Cheron et al., 2009). More compassionate parents of children may be less avoidant because they are more actively focused upon supporting their child than on their own psychological discomfort. Alternatively, parents who are less avoidant could find it easier to be compassionate toward their child because they are not using attentional resources to manage their own internal state (Kashdan et al., 2008). Mothers of infants are less avoidant if they are less judgmental regarding their parenting and more emotionally self-aware. It is interesting that emotional self-awareness is only predictive of parental experiential avoidance in mothers of infants, and not children. As noted above, infants are less able than older children to regulate themselves and are therefore more likely to be dysregulated for reasons that may not be obvious, which could be frustrating or distressing to a parent. It is possible that parents who are more emotionally self-aware and regulated will be more likely to realize that the psychological discomfort they experience in such situations is a normal emotional reaction to parenting an infant and that this psychological discomfort need not be avoided or suppressed.

Last, parental accommodation of child anxiety was predicted by NJAPF in mothers of children and by EAS and CC in mothers of infants. Mothers of children are less accommodating of their child's anxiety if they are less judgmental regarding their own parenting, whereas mothers of infants are less accommodating if they are more emotionally self-aware and less compassionate with their infant. Compassion involves engaging with someone's suffering rather than avoiding it (Carona et al., 2017), for example through accommodation or overprotection. The finding that *lower* compassion predicts less accommodation behavior therefore seems contradictory to this view of compassion. However, this finding is consistent with the evolutionary perspective that the purpose of a mother-infant attachment relationship is to provide physical and emotional comfort to the infant (Paquette, 2004). While parental overprotectiveness is generally seen as a risk factor for child anxiety (Yap et al., 2014), this is not the case for infants (Möller et al., 2015).

Conducting separate regression analyses for mothers of children and infants has disclosed a different pattern of findings regarding the most important predictors for each group of mothers. For mothers of children, non-judgmental acceptance of parental functioning predicted all parent outcomes related to child internalizing problems and was in each case the largest predictor, making it the most important predictor of outcomes for this group of mothers. This facet might be relevant in this group of mothers because they interpret their child's behavior as reflecting upon the adequacy of their parenting. However, for mothers of infants only, the two facets relating to self-awareness and self-regulation, EAS and ENRP, appear to be important. This is likely to be related to the developmental stage of infants compared to children. The relative inability of all infants to self-regulate requires mothers of infants to assist their infants by regulating *themselves* emotionally and behaviourally. Mothers of infants may be less likely to interpret their infant's behavior as related to the adequacy of their parenting, perhaps because there is a general

understanding that infants, unlike children, cannot regulate their own behavior. Our finding regarding the importance of EAS is also consistent with a recent study that investigated the relationship between self-reported mindful parenting, and the quality of interactions between mothers and their 0–4 year-old child (Potharst et al., 2020). In that study, higher EAS predicted higher quality interactions between mother and child. It was suggested that mothers' emotional self-awareness is an underlying requirement for conscious decision-making in parenting and therefore affects behaviors toward the child (Potharst et al., 2020).

Clinical Implications

The findings discussed above have potentially important clinical implications. First, in line with evidence that mindful parenting and general trait mindfulness are correlated (Meppelink et al., 2016), the present results showed mindful parenting was related to formal mindfulness practice. However, these relationships were weak, indicating that a parent's general mindfulness practice may not have a meaningful impact on their ability to be mindful with their child. Further, as increases in mindful parenting, but not general mindfulness, predict reductions in child psychopathology (Meppelink et al., 2016), families managing child psychopathology may benefit more from mindful parenting programs targeted specifically toward parenting difficulties, rather than from general mindfulness programs.

Second, mindful parenting interventions may be useful in treating child internalizing problems. While cognitive-behavioral therapy (CBT) enjoys the most empirical support as a treatment for child anxiety disorders (MacPherson and Fristad, 2014), a remission rate of 59% across these disorders (James et al., 2013) shows the clear need for additional treatment approaches that cater to those families not helped by CBT. Parent psychopathology and underlying emotion regulation deficits (Aldao et al., 2010) are barriers to the effective treatment of child psychopathology (Maliken and Katz, 2013). Addressing these parental difficulties, for example through a mindful parenting program, is therefore likely to improve child outcomes.

Finally, there is a need to consider the focus of mindful parenting interventions offered to families both in terms of the child's age and the nature of a child's difficulties. In relation to child age, the present results showed a different pattern of predictors for mothers of children vs. infants, suggesting that parents might benefit more from attending programs that are tailored to target the most relevant facets of mindful parenting for parents with children in the relevant age group. Regarding the nature of the child's difficulties, mindful parenting interventions have, to date, largely been targeted to parents of children with externalizing problems, who tend to experience greater reactivity toward their children as a result of elevated parenting stress (Bögels et al., 2010). However, the ENRP facet of mindful parenting did not predict the majority of outcome variables in this study. Instead, NJAPF, CC, EAC, and EAS predicted child internalizing and related parent variables. Accordingly, in mindful parenting interventions for families with internalizing children, it may be important to focus on building non-judgment, compassion and emotional awareness in parents, rather than targeting non-reactivity. At the time of this study, we are not aware of any published research regarding the effectiveness of mindful parenting interventions specifically aimed at families of children with internalizing problems.

Limitations

There are limitations to note in connection with this study. First, as the IMP validation was undertaken only with mothers, the results are not generalizable to fathers. We are unaware of any investigations of the IMP's factor structure in father-only samples, so a gap remains in our understanding of how the construct of mindful parenting may compare in fathers and mothers. This issue is an important one to address because it informs the question of whether mindful parenting programs, which are currently the same for mothers and fathers, should be tailored to reflect any gender differences in mindful parenting. Second, we only considered the structure of mindful parenting in infants aged 0–2 years and children aged 3–18 years. The group of children in particular had a broad age range, and given that parenting children at each end of this age range may be quite different, it would be interesting for future studies to look at mindful parenting in more precise age groups. Lastly, although we have identified several parent variables that might mediate the relationship between mindful parenting and child internalizing problems, including parental experiential avoidance, beliefs about child anxiety and overprotectiveness, our data are cross-sectional so no meaningful path analyses could be conducted. Since no conclusions can be drawn about the directions of effect from the present results, future studies with longitudinal data are now needed to test these potential mediators.

CONCLUSION

This study shows for the first time that the IMP is a valid measure of mindful parenting in English-speaking, community-recruited mothers. Importantly, it also confirms that the IMP operates similarly amongst mothers of pre-verbal infants and mothers of children. Mindful parenting, in particular the facets relating to non-judgmental acceptance of parenting, compassion and emotional awareness, predicts child internalizing problems and parent variables related to child internalizing problems. Mindful parenting programs have the potential to help the substantial proportion of families of children with internalizing problems who are not currently well-served by CBT, including those families grappling with parental psychopathology or emotion regulation difficulties.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by University of Sydney Human Research Ethics Committee. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

VB designed the study, collected, and analyzed the data, wrote the first version of the manuscript and revised subsequent versions. MS reviewed and revised the design, statistical analyses, and each version of the manuscript. All authors contributed to the article and approved the submitted version.

FUNDING

This research was supported by a University of Sydney Laffan Prize awarded to MS and an Australian Government Research Training Program (RTP) Scholarship awarded to VB.

REFERENCES

Aldao, A., Nolen-Hoeksema, S., and Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: a meta-analytic review. *Clin. Psychol. Rev.* 30, 217–237. doi: 10.1016/j.cpr.2009.11.004

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., and Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the depression anxiety stress scales (DASS) in clinical groups and a community sample. *Psychol. Assess.* 10, 176–181. doi: 10.1037/1040-3590.10.2.176

Barlow, D. H. (2000). Unravelling the mysteries of anxiety and its disorders from the perspective of emotion theory. *Am. Psychol.* 55, 1247–1263. doi: 10.1037/0003-066X.55.11.1247

Bögels, S. M., Lehtonen, A., and Restifo, K. (2010). Mindful parenting in mental health care. *Mindfulness* 1, 107–120. doi: 10.1007/s12671-010-0014-5

Burgdorf, V., Szabó, M., and Abbott, M. J. (2019). The effect of mindfulness interventions for parents on parenting stress and youth psychological outcomes: a systematic review and meta-analysis. *Front. Psychol.* 10:1336. doi: 10.3389/fpsyg.2019.01336

Byrne, B. M. (2010). *Structural Equation Modelling With AMOS, 2nd edn*. Ottawa, ON: Routledge.

Carona, C., Rijo, D., Salvador, C., Castilho, P., and Gilbert, P. (2017). Compassion-focused therapy with children and adolescents. *Br. J. Psychol. Adv.* 23, 240–252. doi: 10.1192/apt.bp.115.015420

Cheron, D. M., Ehrenreich, J. T., and Pincus, D. B. (2009). Assessment of parental experiential avoidance in a clinical sample of children with anxiety disorders. *Child Psychiatry Hum. Dev.* 40, 383–403. doi: 10.1007/s10578-009-0135-z

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*. Routledge.

Crawford, J. R., and Henry, J. D. (2003). The Depression Anxiety Stress Scales (DASS): normative data and latent structure in a large non-clinical sample. *Brit. J. Clin. Psychol.* 42, 111–131. doi: 10.1348/014466503321903544

de Bruin, E. I., Zijlstra, B. J. H., Geurtzen, N., van Zundert, R. M. P., van de Weijer-Bergsma, E., Hartman, E. E., et al. (2014). Mindful parenting assessed further: psychometric properties of the Dutch version of the Interpersonal Mindfulness in Parenting scale (IMP). *Mindfulness* 5, 200–212. doi: 10.1007/s12671-012-0168-4

Drake, K. L., and Ginsburg, G. S. (2012). Family factors in the development, treatment, and prevention of childhood anxiety disorders. *Clin. Child Fam. Psychol. Rev.* 15, 144–162. doi: 10.1007/s10567-011-0109-0

Duncan, L. G. (2007). *Assessment of Mindful Parenting Among Parents of Early Adolescents*: *Development and Validation of the Interpersonal Mindfulness in Parenting Scale*. Doctoral Dissertation, Pennsylvania State University.

Duncan, L. G., Coatsworth, J., and Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clin. Child Fam. Psychol. Rev.* 12, 255–270. doi: 10.1007/s10567-009-0046-3

Emerson, L. M., Aktar, E., de Bruin, E., Potharst, E., and Bögels, S. (2019). Mindful parenting in secondary child mental health: key parenting predictors of treatment effects. *Mindfulness*. doi: 10.1007/s12671-019-01176-w

Francis, S. E., and Chorpita, B. F. (2010). Development and evaluation of the parental beliefs about anxiety questionnaire. *J. Psychopathol. Behav. Assess.* 32, 138–149. doi: 10.1007/s10862-009-9133-5

Geurtzen, N., Scholte, R. H. J., Engels, R. C. M. E., Tak, Y. R., and van Zundert, R. M. P. (2015). Association between mindful parenting and adolescents' internalising problems: non-judgmental acceptance of parenting as core element. *J. Child Fam. Stud.* 24, 1117–1128. doi: 10.1007/s10826-014-9920-9

Goodman, A., Ploubidis, D. L., and Lamping, G. B. (2010). When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the Strengths and Difficulties Questionnaire (SDQ): data from British parents, teachers and children. *J. Abnorm. Child Psychol.* 38, 1179–1191. doi: 10.1007/s10802-010-9434-x

Goodman, R. (1997). The strengths and difficulties questionnaire: a research note. *J. Child Psychol. Psychiatry* 38, 581–586. doi: 10.1111/j.1469-7610.1997.tb01545.x

Haydicky, J., Shecter, C., Wiener, J., and Ducharme, J. M. (2015). Evaluation of MBCT for adolescents with ADHD and their parents: impact on individual and family functioning. *J. Child Fam. Stud.* 24, 76–94. doi: 10.1007/s10826-013-9815-1

Izard, C. E., Woodburn, E. M., Finlon, K. J., Krauthamer-Ewing, E. S., Grossman, S. R., and Seidenfeld, A. (2011). Emotion knowledge, emotion utilization, and emotion regulation. *Emot. Rev.* 3, 44–52. doi: 10.1177/1754073910380972

James, A. C., James, G., Cowdrey, F. A., Soler, A., and Choke, A. (2013). Cognitive behavioural therapy for anxiety disorders in children and adolescents. *Cochrane Database Syst. Rev.* CD004690. doi: 10.1002/14651858.CD004690.pub3

Kabat-Zinn, J., and Kabat-Zinn, M. (1997). *Everyday Blessings*: *The Inner Work of Mindful Parenting*. New York, NY: First Trade.

Karavasilis, L., Doyle, A. B., and Markiewicz, D. (2003). Associations between parenting style and attachment to mother in middle childhood and adolescence. *Int. J. Behav. Dev.* 27, 153–164. doi: 10.1080/0165025024400015

Kashdan, T. B., Zvolensky, M. J., and McLeish, A. C. (2008). Anxiety sensitivity and affect regulatory strategies: individual and interactive risk factors for anxiety-related symptoms. *J. Anxiety Disord.* 22, 429–440. doi: 10.1016/j.janxdis.2007.03.011

Kim, E., Krägeloh, C. U., Medvedev, O. N., Duncan, L. G., and Singh, N. N. (2018). Interpersonal mindfulness in parenting scale: testing the psychometric properties of a Korean version. *Mindfulness* 10, 516–528. doi: 10.1007/s12671-017-0871-2

Lo, H. H. M., Leung, J. W. K., Duncan, L. G., Ma, Y., Siu, A. F. Y., Chan, S. K. C., et al. (2018). Validating of the interpersonal mindfulness in parenting scale in Hong Kong Chinese. *Mindfulness* 9, 1390–1401. doi: 10.1007/s12671-017-0879-7

Lovibond, P. F., and Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the depression anxiety stress scales (dass) with the beck depression and anxiety inventories. *Behav. Res. Therapy* 33, 335–343. doi: 10.1016/0005-7967(94)00075-U

MacPherson, H. A., and Fristad, M. A. (2014). Evidence-based psychosocial treatments for pediatric mood and anxiety disorders. *Curr. Treat. Opt. Psychiatry* 1, 48–65. doi: 10.1007/s40501-013-0002-1

Maliken, A. C., and Katz, L. F. (2013). Exploring the impact of parental psychopathology and emotion regulation on evidence-based parenting interventions: a transdiagnostic approach to improving treatment effectiveness. *Clin. Child Fam. Psychol. Rev.* 16, 173–186. doi: 10.1007/s10567-013-0132-4

Meppelink, R., de Bruin, E. I., Wanders-Mulder, F. H., Vennik, C. J., and Bögels, S. M. (2016). Mindful parenting training in child psychiatric settings: heightened parental mindfulness reduces parents' and children's psychopathology. *Mindfulness* 7, 680–689. doi: 10.1007/s12671-016-0504-1

Meyer, J. M., Clapp, J. D., Whiteside, S. P., Dammann, J., Kriegshauser, K. D., Hale, L. R., et al. (2018). Predictive relationship between parental beliefs and accommodation of pediatric anxiety. *Behav. Therapy* 49, 580–593. doi: 10.1016/j.beth.2017.11.004

Möller, E. L., MajdandŽić, M., and Bögels, S. M. (2015). Parental anxiety, parenting behavior, and infant anxiety: differential associations for fathers and mothers. *J. Child Fam. Stud.* 24, 2626–2637. doi: 10.1007/s10826-014-0065-7

Moreira, H., and Canavarro, M. C. (2017). Psychometric properties of the Interpersonal Mindfulness in Parenting Scale in a sample of Portuguese mothers. *Mindfulness* 8, 691–706. doi: 10.1007/s12671-016-0647-0

Moreira, H., and Canavarro, M. C. (2018). The association between self-critical rumination and parenting stress: the mediating role of mindful parenting. *J. Youth Adolesc.* 49, 192–211. doi: 10.1007/s10964-019-01133-9

Moretti, M. M., and Peled, M. (2004). Adolescent-parent attachment: Bonds that support healthy development. *Paediatr. Child Health* 9, 551–555. doi: 10.1093/pch/9.8.551

Morris, A. S., Criss, M. M., Silk, J. S., and Houltberg, B. J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Dev. Perspect.* 11, 233–238. doi: 10.1111/cdep.12238

Paquette, D. (2004). Theorizing the father-child relationship: Mechanisms and developmental outcomes. *Hum. Dev.* 47, 193–219. doi: 10.1159/000078723

Potharst, E. S., Aktar, E., Rexwinkel, M., Rigterink,. M., and Bögels, S. M. (2017). Mindful with your baby: feasibility, acceptability and effects of a mindful parenting group training for mothers and their babies in a mental health context. *Mindfulness* 8, 1236–1250. doi: 10.1007/s12671-017-0699-9

Potharst, E. S., Leyland, A., Colonnesi, C., Veringa, I. K., Salvadori, E. A., Jakschik, M., et al. (2020). Does mothers' self-reported mindful parenting relate to the observed quality of parenting behavior and mother-child interaction? *Mindfulness*. doi: 10.1007/s12671-020-01533-0. [Epub ahead of print].

Rutherford, H. J. V., Wallace, N. S., Laurent, H. K., and Mayes, L. C. (2015). Emotion regulation in parenthood. *Dev. Rev.* 36, 1–14. doi: 10.1016/j.dr.2014.12.008

Suveg, C., Shaffer, A., Morelen, D., and Thomassin, K. (2011). Links between maternal and child psychopathology symptoms: mediation through child emotion regulation and moderation through maternal behavior. *Child Psychiatry Hum. Dev.* 42, 507–520. doi: 10.1007/s10578-011-0223-8

Wolk, C. B., Caporino, N. E., McQuarrie, S., Settipani, C. A., Podell, J. L., Crawley, S., et al. (2016). Parental Attitudes, Beliefs, and Understanding of Anxiety (PABUA): development and psychometric properties of a measure. *J. Anxiety Disord.* 39, 71–78. doi: 10.1016/j.janxdis.2016.03.001

Yap, M. B. H., Pilkington, P. D., Ryan, S. M., and Jorm, A. F. (2014). Parental factors associated with childhood anxiety, depression and internalizing problems: a systematic review and meta-analysis. *J. Affect. Disord.* 175, 424–440. doi: 10.1016/j.jad.2015.01.050

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

APPENDIX B2

THE UNIVERSITY OF SYDNEY

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE
Friday, 12 April 2019

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

The University of Sydney Human Research Ethics Committee (HREC) has considered your application.

I am pleased to inform you that after consideration of your response, your project has been approved.

Details of the approval are as follows:

Project No.:	**2019/183**
Project Title:	**Mindful Parenting EFA**
Authorised Personnel:	**Szabo Marianna; Burgdorf Virginia;**
Approval Period:	**12/04/2019** to **12/04/2023**
First Annual Report Due:	**12/04/2020**

Documents Approved:

Date Uploaded	Version Number	Document Name
15/03/2019	Version 1	Demographics Questionnaire
15/03/2019	Version 1	Text of Facebook post/email re: study
15/03/2019	Version 1	Advertisement to Prolific participants
15/03/2019	Version 1	Interpersonal Mindfulness in Parenting Scale
10/04/2019	Version 2	Participant Information & Consent (clean)
10/04/2019	Version 2	Participant Info & Consent - Prolific Academic (clean)

Condition/s of Approval

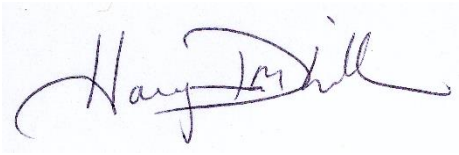
- Research must be conducted according to the approved proposal.
- An annual progress report must be submitted to the Ethics Office on or before the anniversary of approval and on completion of the project.
- You must report as soon as practicable anything that might warrant review of ethical approval of the project including:
  - Serious or unexpected adverse events (which should be reported within 72 hours).
  - Unforeseen events that might affect continued ethical acceptability of the project.
- Any changes to the proposal must be approved prior to their implementation (except where an amendment is undertaken to eliminate *immediate* risk to participants).
- Personnel working on this project must be sufficiently qualified by education, training and experience for their role, or adequately supervised. Changes to personnel must be reported and approved.
- Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, as relevant to this project.

- Data and primary materials must be retained and stored in accordance with the relevant legislation and University guidelines.
- Ethics approval is dependent upon ongoing compliance of the research with the *National Statement on Ethical Conduct in Human Research*, the *Australian Code for the Responsible Conduct of Research*, applicable legal requirements, and with University policies, procedures and governance requirements.
- The Ethics Office may conduct audits on approved projects.
- The Chief Investigator has ultimate responsibility for the conduct of the research and is responsible for ensuring all others involved will conduct the research in accordance with the above.

This letter constitutes ethical approval only.

Please contact the Ethics Office should you require further information or clarification.

Sincerely,



Dr Haryana Dillon
Chair
Psychology Honours Review Committee (Low Risk)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

Tuesday, 3 December 2019

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

Your request to modify this project, which was submitted on 14/11/2019, has been considered.

This project has been approved to proceed with the proposed amendments.

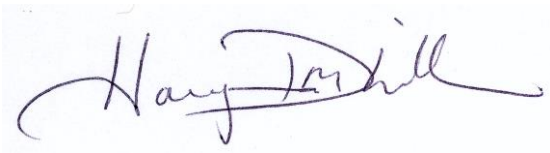
Protocol Number: **2019/183**
Protocol Title: **Mindful Parenting EFA**

Documents Approved:

Date Uploaded	Version Number	Document Name
14/11/2019	Version 3	Facebook post clean
14/11/2019	Version 2	Participant Information (clean)

Please contact the ethics office should you require further information.

Sincerely,



Dr Haryana Dillon
Chair
Psychology Low Risk Subcommittee

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

Friday, 7 June 2019

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

The University of Sydney Human Research Ethics Committee (HREC) has considered your application.

I am pleased to inform you that your project has been approved

Details of the approval are as follows:

Project No.:	**2019/440**
Project Title:	**Parenting practices, emotion regulation and beliefs about child anxiety.**
Authorised Personnel:	**Szabo Marianna; Burgdorf Virginia;**
Approval Period:	**06/06/2019** to **06/06/2023**
First Annual Report Due:	**06/06/2020**

Documents Approved:

Date Uploaded	Version Number	Document Name
23/05/2019	Version 1	Advertisement to Prolific participants
22/05/2019	Version 1	CERQ
22/05/2019	Version 1	DASS-21
22/05/2019	Version 1	Demographics Questionnaire
22/05/2019	Version 1	IMP
22/05/2019	Version 1	PAAQ
22/05/2019	Version 1	PABUA
23/05/2019	Version 1	Participant Info & Consent
23/05/2019	Version 1	Participant Info & Consent for Prolific
22/05/2019	Version 1	SDQ
24/05/2019	Version 1	Text to advertise for study on Facebook or at Science Week

Condition/s of Approval

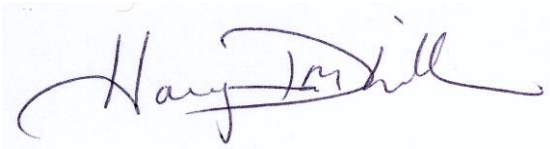
- Research must be conducted according to the approved proposal.
- An annual progress report must be submitted to the Ethics Office on or before the anniversary of approval and on completion of the project.
- You must report as soon as practicable anything that might warrant review of ethical approval of the project including:
  - Serious or unexpected adverse events (which should be reported within 72 hours).
  - Unforeseen events that might affect continued ethical acceptability of the project.
- Any changes to the proposal must be approved prior to their implementation (except where an amendment is undertaken to eliminate *immediate* risk to participants).
- Personnel working on this project must be sufficiently qualified by education, training and experience for their role, or adequately supervised. Changes to personnel must be reported and approved.

- Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, as relevant to this project.
- Data and primary materials must be retained and stored in accordance with the relevant legislation and University guidelines.
- Ethics approval is dependent upon ongoing compliance of the research with the *National Statement on Ethical Conduct in Human Research*, the *Australian Code for the Responsible Conduct of Research*, applicable legal requirements, and with University policies, procedures and governance requirements.
- The Ethics Office may conduct audits on approved projects.
- The Chief Investigator has ultimate responsibility for the conduct of the research and is responsible for ensuring all others involved will conduct the research in accordance with the above.

This letter constitutes ethical approval only.

Please contact the Ethics Office should you require further information or clarification.

Sincerely,



Dr Haryana Dillon
Chair
Psychology Low Risk Subcommittee

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

Friday, 19 July 2019

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

Your request to modify this project, which was submitted on 27/06/2019, has been considered.

This project has been approved to proceed with the proposed amendments.

Protocol Number: **2019/440**
Protocol Title: **Parenting practices, emotion regulation and beliefs about child anxiety.**

Documents Approved:

Date Uploaded	Version Number	Document Name
27/06/2019	Version 1	Parental Accommodation Scale

Please contact the ethics office should you require further information.

Sincerely,

Associate Professor Stephen Fuller
Chair
Modification Review Committee Chair (MRC 3)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

APPENDIX B3

Text of Facebook post, advertising the study (183/2019)

"We are looking for parents, or people in the role of parent, with at least one child currently aged 0-20 years. Please help us with our research by taking this short survey about parenting.

After a few questions on demographics, we will ask you some questions regarding your interactions with your child. If you have more than one child, we will ask you to answer the questions about just one of your children.

The survey is anonymous and will take about 10 minutes. If you are interested in participating, please click on the link below:

[*insert Qualtrics link*]

Please share this survey with your family, friends and other contacts!"

Text of Facebook post advertising the study (440/2019)

Are you a parent, or in the role of parent, to at least one child who is currently aged 0-20 years?

If so, please help us with our research on the relationships between parenting practices, emotion regulation and beliefs about child anxiety. Understanding these relationships will help us to design strategies that assist parents to manage their child's anxiety.

Participation in the study involves completion of an online survey. It is anonymous and will take about 20 minutes. If you are interested in participating, please click on the link below:

[*insert Qualtrics link*]

Please share this survey with your family, friends and other contacts!

APPENDIX B4

Participant Information Statement 183/2019

THE UNIVERSITY OF SYDNEY

School of Psychology
Faculty of Science

ABN 15 211 513 464

Dr Marianna Szabo
Senior Lecturer
School of Psychology

Room 417
Brennan MacCallum Building (A18)
The University of Sydney
NSW 2006 AUSTRALIA
Telephone: +61 2 9351 5147
Email: marianna.szabo@sydney.edu.au
Web: http://www.sydney.edu.au/

Understanding Parenting Practices

PARTICIPANT INFORMATION STATEMENT

(1) What is this study about?

You are invited to take part in a research study about how parents listen and respond to their children and whether these practices differ according to certain parental factors (like whether a parent is a primary caregiver) or child factors (like age or gender).

You have been invited to participate because you are a parent, or you are in the role of parent, to at least one child currently aged between 0-20 years of age. This Participant Information Statement tells you about the research study, so you can decide if you want to take part.

(2) Who is running the study?

The study is being carried out by Gini Burgdorf as part of the degree of Doctor of Philosophy at The University of Sydney. This will take place under the supervision of Dr Marianna Szabo (Senior Lecturer, The University of Sydney).

(3) What will the study involve for me?

You will be asked to complete an online questionnaire, at a time that suits you. The questionnaire will ask you some questions about demographics and your parenting practices.

(4) How much of my time will the study take?

The questionnaire will take about 10 minutes to complete.

(5) Who can take part in the study?

You can take part in this study if:

- you are a parent, or in the role of parent, to a child currently aged between 0-20 years; and
- English is your primary language.

(6) Do I have to be in the study? Can I withdraw from the study once I've started?

Being in this study is completely voluntary. Your decision whether to participate will not affect any current or future relationship with the researchers or anyone else at the University of Sydney.

If you decide to take part in the study and then change your mind, you can withdraw at any time, by not submitting the online questionnaire. However, once submitted, your responses cannot be withdrawn because they are anonymous and we will not be able to tell which set of responses is yours.

(7) Are there any risks or costs associated with being in the study?

Aside from giving up some of your time, we do not expect that there will be any risks or costs associated with taking part in this study.

(8) Are there any benefits associated with being in the study?

You will not receive any direct benefits. However, your answers will help researchers better understand parenting practices in an English-speaking population.

(9) What will happen to information about me that is collected during the study?

By providing your consent, you are agreeing to us collecting personal information from you for the purposes of this research study. Your information (that is, your questionnaire answers) will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

- Your information will be collected through an online questionnaire, hosted on Qualtrics. Qualtrics meets strict security requirements.
- The information collected will be "non-identifiable". This means that your questionnaire answers cannot be linked to you in any way. This non-identifiable information will be stored for 5 years (as required by law) in the University's Research Data Store and will then be destroyed.
- Study findings may be published in the researcher's doctoral thesis, or used by the researcher either alone or with collaborating researchers to write scientific papers or conference presentations. Only non-identifiable information will be used in such publications.

(10) Can I tell other people about the study?

Yes, you are welcome to.

(11) What if I would like further information about the study?

If you would like to know more at any stage of the study, please feel free to contact the Researcher at virginia.burgdorf@sydney.edu.au.

(12) Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. We will post a summary of the results on our Facebook page, Mindful Parenting Research. You can "follow" that page to be notified when the summary has been posted. Alternatively, you may email the Researcher at virginia.burgdorf@sydney.edu.au and ask for a summary of the results by email.

(13) What if I have a complaint or any concerns about the study?

Research involving humans in Australia is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this study have been approved by the HREC of the University of Sydney *(*protocol number 2019/183). As part of this process, we have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007).* This statement has been developed to protect people who agree to take part in research studies.

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and protocol number.

The Manager, Ethics Administration, University of Sydney:

- **Telephone:** +61 2 8627 8176
- **Email:** human.ethics@sydney.edu.au
- **Fax:** +61 2 8627 8177 (Facsimile)

APPENDIX B5

Demographics Questionnaire

1. Do you consider yourself to be the primary caregiver for the children in your family?
    a. Yes
    b. No
    c. I share the caregiving role equally with another family member

2. What is your age (in years): [*select from pull down menu*]

3. In which country is your **primary** residence? [*select from pull-down menu*]

4. Please choose the cultural background that you **most closely** identify with:
    a. Australian
    b. Australian Aboriginal, Torres Strait Islander or South Sea Islander
    c. New Zealander
    d. British or Irish
    e. Western European
    f. Northern European
    g. Southern European
    h. Eastern European
    i. South-East Asian
    j. North-East Asian
    k. Southern or Central Asian
    l. Middle Eastern
    m. North African
    n. Sub-Saharan African
    o. North American
    p. South or Central American
    q. Other (*please specify*)

5. What is the highest level of education you have **completed**?
    a. Post-graduate degree (Master's degree or doctoral degree)
    b. Bachelor's degree (including an Honours-level degree)
    c. Associate's degree
    d. Vocational training
    e. High school or secondary school (Year 12 or equivalent) or less
    f. Other

6. How many children are in your family:
    a. 1

b. 2
c. 3
d. 4
e. 5 or more

7. Have you ever been diagnosed with a mental health condition?
    a. Yes
    b. No

8. Have you ever engaged in the formal practice of mindfulness (or other form of meditation or contemplative practice)?
    a. No formal practice
    b. Mindfulness
    c. Yoga
    d. Tai chi
    e. Other (*please specify*)

9. [*Display this question only if "Mindfulness" is selected in Q8*] For approximately how long have you engaged in the formal practice of mindfulness?
    a. Less than 3 months
    b. 3 to 6 months
    c. 6 months to 1 year
    d. 1 to 5 years
    e. 5 to 10 years
    f. More than 10 years

10. [*Display this question only if "Mindfulness" is selected in Q8*] How frequently are you currently engaging in formal practice of mindfulness?
    a. Once or more a day
    b. 3 or more times a week
    c. 1 to 2 times a week
    d. Once a fortnight
    e. Once a month
    f. Less than once a month
    g. Not currently practicing

For the following questions about parenting practices, please choose one child aged 0-20 years in your family, and answer the questions about your parenting of that child:

11. What is your relationship to the child about whom you will answer the parenting questions?
    a. Biological mother
    b. Biological father
    c. Adoptive mother
    d. Adoptive father
    e. Stepmother
    f. Stepfather

g. Foster mother
h. Foster father
i. Grandmother
j. Grandfather
k. Other (*please specify*)

12. What is the gender of the child about whom you will answer the parenting questions?
    a. Male
    b. Female
    c. Other (*please specify*)

13. What is the age of the child about whom you will answer the parenting questions? [*select from pull-down menu*]

Interpersonal Mindfulness in Parenting Scale

The following statements describe different ways that parents interact with their children on a daily basis. Please select whether you think the statement is "Never True", "Rarely True", "Sometimes True", "Often True" or "Always True" for you.

Remember there are no right or wrong answers. Please answer according to what ***really*** reflects your experience rather than what you think your experience *should* be. Please treat each statement separately from every other statement.

	Never True	Rarely True	Sometimes True	Often True	Always True
1. I find myself listening to my child with one ear because I am busy doing or thinking about something else at the same time.	1	2	3	4	5
2. When I'm upset with my child, I notice how I am feeling before I take action.	1	2	3	4	5
3. I notice how changes in my child's mood affect my mood.	1	2	3	4	5
4. I listen carefully to my child's ideas, even when I disagree with them.	1	2	3	4	5
5. I often react too quickly to what my child says or does.	1	2	3	4	5
6. I am aware of how my moods affect the way I treat my child.	1	2	3	4	5
7. Even when it makes me uncomfortable, I allow my child to express his/her feelings.	1	2	3	4	5
8. When I am upset with my child, I calmly tell him/her how I am feeling.	1	2	3	4	5
9. I rush through activities with my child without really being attentive to him/her.	1	2	3	4	5
10. I have difficulty accepting my child's growing independence.	1	2	3	4	5
11. How I am feeling tends to affect my parenting decisions, but I do not realise it until later.	1	2	3	4	5

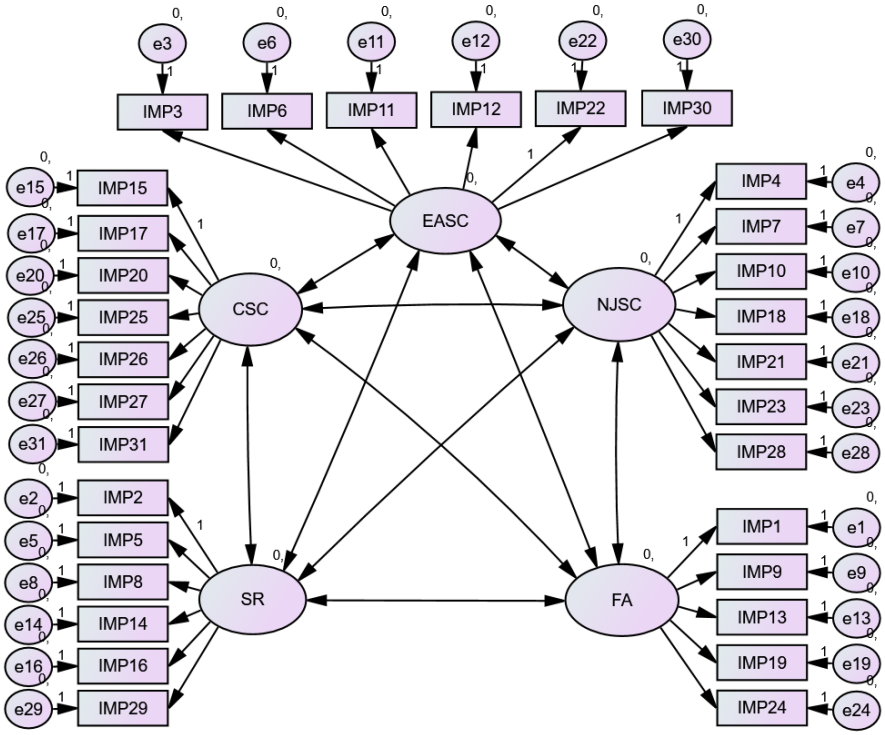
12. It is hard for me to tell what my child is feeling.	1	2	3	4	5
13. When I am doing things with my child, my mind wanders off and I am easily distracted.	1	2	3	4	5
14. When my child misbehaves, it makes me so upset I say or do things I later regret.	1	2	3	4	5
15. I tend to be hard on myself when I make mistakes as a parent.	1	2	3	4	5
16. When my child does something that upsets me, I try to keep my emotions in balance.	1	2	3	4	5
17. When times are really difficult with my child, I tend to blame myself.	1	2	3	4	5
18. When things I try to do as a parent do not work out, I can accept them and move on.	1	2	3	4	5
19. I am often so busy thinking about other things that I realise I am not really listening to my child.	1	2	3	4	5
20. When I do something as a parent that I regret, I try to give myself a break.	1	2	3	4	5
21. In difficult situations with my child, I pause without immediately reacting.	1	2	3	4	5
22. It is easy for me to tell when my child is worried about something.	1	2	3	4	5
23. I tend to criticize myself for not being the kind of parent I want to be.	1	2	3	4	5
24. I pay close attention to my child when we are spending time together.	1	2	3	4	5
25. I am kind to my child when he/she is upset.	1	2	3	4	5
26. When I am having a hard time with parenting, I feel like other parents must have an easier time of it.	1	2	3	4	5
27. When my child is going through a difficult time, I try to give him/her the nurturing and caring he/she needs.	1	2	3	4	5
28. I try to understand my child's point of view, even when his/her opinions do not makes sense to me.	1	2	3	4	5

29. When something my child does upsets me, I get carried away with my feelings.	1	2	3	4	5
30. I can tell what my child is feeling even if he/she does not say anything.	1	2	3	4	5
31. I try to be understanding and patient with my child when he/she is having a hard time.	1	2	3	4	5

Appendix B6

Model fit for children

Duncan et al. (2009) model (Model C.1)



Regression Weights: (Children - Default model)

			Estimate	S.E.	C.R.	P
IMP1	<---	FA	1.000			
IMP9	<---	FA	1.186	.083	14.354	***
IMP13	<---	FA	1.221	.087	14.041	***
IMP19	<---	FA	1.221	.085	14.364	***
IMP24	<---	FA	.954	.069	13.723	***
IMP15	<---	CSC	1.000			
IMP17	<---	CSC	1.041	.155	6.734	***
IMP20	<---	CSC	1.057	.145	7.304	***
IMP25	<---	CSC	.777	.104	7.440	***
IMP26	<---	CSC	1.375	.185	7.421	***
IMP2	<---	SR	1.000			
IMP5	<---	SR	1.155	.107	10.781	***
IMP8	<---	SR	.976	.100	9.756	***
IMP14	<---	SR	1.391	.121	11.490	***
IMP16	<---	SR	1.118	.107	10.490	***
IMP4	<---	NJSC	1.000			
IMP7	<---	NJSC	.805	.105	7.636	***
IMP10	<---	NJSC	.673	.114	5.924	***
IMP18	<---	NJSC	1.268	.132	9.569	***
IMP21	<---	NJSC	1.348	.132	10.199	***
IMP23	<---	NJSC	1.697	.169	10.045	***
IMP22	<---	EASC	1.000			

			Estimate	S.E.	C.R.	P
IMP30	<---	EASC	1.065	.076	13.932	***
IMP27	<---	CSC	.786	.104	7.535	***
IMP12	<---	EASC	1.145	.086	13.260	***
IMP11	<---	EASC	.580	.090	6.412	***
IMP6	<---	EASC	.301	.078	3.846	***
IMP3	<---	EASC	.105	.084	1.254	.210
IMP31	<---	CSC	.853	.111	7.711	***
IMP28	<---	NJSC	.882	.099	8.920	***
IMP29	<---	SR	1.378	.119	11.539	***

Standardized Regression Weights: (Children - Default model)

			Estimate
IMP1	<---	FA	.719
IMP9	<---	FA	.777
IMP13	<---	FA	.759
IMP19	<---	FA	.777
IMP24	<---	FA	.741
IMP15	<---	CSC	.458
IMP17	<---	CSC	.463
IMP20	<---	CSC	.532
IMP25	<---	CSC	.551
IMP26	<---	CSC	.548
IMP2	<---	SR	.595
IMP5	<---	SR	.683
IMP8	<---	SR	.596
IMP14	<---	SR	.750
IMP16	<---	SR	.657
IMP4	<---	NJSC	.548

			Estimate
IMP7	<---	NJSC	.433
IMP10	<---	NJSC	.321
IMP18	<---	NJSC	.586
IMP21	<---	NJSC	.645
IMP23	<---	NJSC	.630
IMP22	<---	EASC	.740
IMP30	<---	EASC	.819
IMP27	<---	CSC	.564
IMP12	<---	EASC	.747
IMP11	<---	EASC	.353
IMP6	<---	EASC	.212
IMP3	<---	EASC	.069
IMP31	<---	CSC	.590
IMP28	<---	NJSC	.531
IMP29	<---	SR	.755

Model fit summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	103	1698.703	424	.000	4.006
Saturated model	527	.000	0		
Independence model	62	5561.000	465	.000	11.959

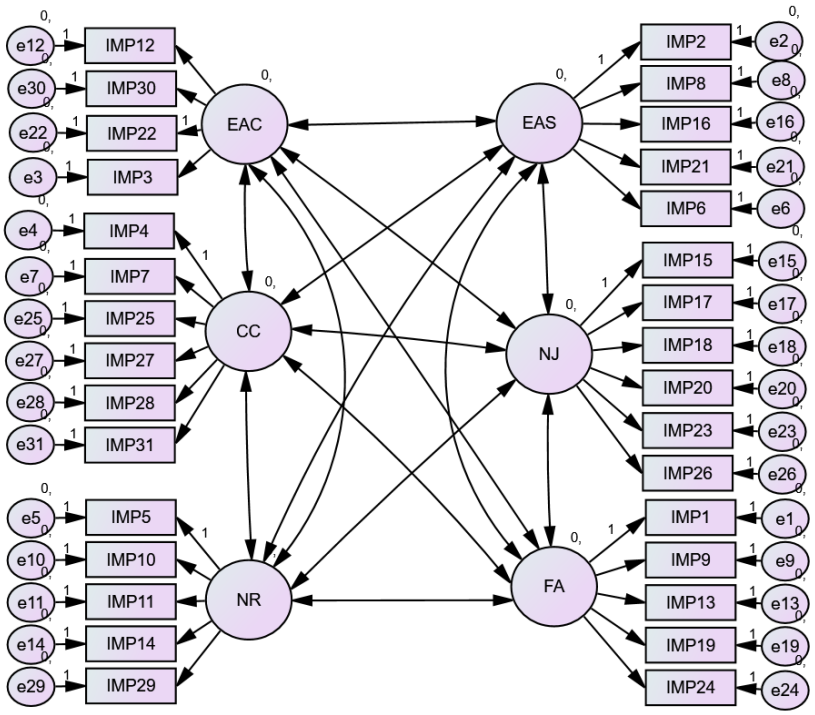
Baseline comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.695	.665	.752	.726	.750
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.087	.083	.092	.000
Independence model	.167	.163	.170	.000

de Bruin et al. (2014) - 31-item model (Model C.2)



Regression Weights: (Children - Default model)

			Estimate	S.E.	C.R.	P
IMP1	<---	FA	1.000			
IMP9	<---	FA	1.194	.083	14.423	***
IMP13	<---	FA	1.227	.087	14.087	***
IMP19	<---	FA	1.222	.085	14.364	***
IMP24	<---	FA	.947	.070	13.610	***
IMP2	<---	EAS	1.000			
IMP8	<---	EAS	.946	.086	11.029	***
IMP16	<---	EAS	1.036	.090	11.527	***
IMP21	<---	EAS	1.249	.099	12.651	***
IMP4	<---	CC	1.000			
IMP7	<---	CC	.909	.096	9.512	***
IMP25	<---	CC	.911	.085	10.657	***
IMP27	<---	CC	.959	.086	11.209	***
IMP28	<---	CC	1.025	.090	11.422	***
IMP5	<---	NR	1.000			
IMP10	<---	NR	.520	.082	6.360	***
IMP11	<---	NR	.997	.084	11.861	***
IMP14	<---	NR	1.190	.084	14.134	***
IMP29	<---	NR	1.159	.083	14.004	***
IMP15	<---	NJ	1.000			
IMP17	<---	NJ	1.037	.084	12.360	***
IMP18	<---	NJ	.799	.070	11.419	***
IMP20	<---	NJ	.774	.073	10.584	***
IMP23	<---	NJ	1.273	.090	14.111	***
IMP26	<---	NJ	1.057	.093	11.375	***
IMP22	<---	EAC	1.000			
IMP30	<---	EAC	1.091	.078	14.067	***

			Estimate	S.E.	C.R.	P
IMP12	<---	EAC	1.117	.085	13.170	***
IMP31	<---	CC	1.013	.089	11.357	***
IMP6	<---	EAS	.060	.079	.764	.445
IMP3	<---	EAC	.127	.083	1.526	.127

Standardized Regression Weights: (Children - Default model)

			Estimate
IMP1	<---	FA	.719
IMP9	<---	FA	.781
IMP13	<---	FA	.762
IMP19	<---	FA	.778
IMP24	<---	FA	.735
IMP2	<---	EAS	.666
IMP8	<---	EAS	.647
IMP16	<---	EAS	.682
IMP21	<---	EAS	.768
IMP4	<---	CC	.632
IMP7	<---	CC	.565
IMP25	<---	CC	.650
IMP27	<---	CC	.694
IMP28	<---	CC	.712
IMP5	<---	NR	.708
IMP10	<---	NR	.340

			Estimate
IMP11	<---	NR	.640
IMP14	<---	NR	.769
IMP29	<---	NR	.761
IMP15	<---	NJ	.693
IMP17	<---	NJ	.698
IMP18	<---	NJ	.640
IMP20	<---	NJ	.589
IMP23	<---	NJ	.818
IMP26	<---	NJ	.637
IMP22	<---	EAC	.743
IMP30	<---	EAC	.842
IMP12	<---	EAC	.731
IMP31	<---	CC	.707
IMP6	<---	EAS	.042
IMP3	<---	EAC	.084

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	108	944.811	419	.000	2.255
Saturated model	527	.000	0		
Independence model	62	5561.000	465	.000	11.959

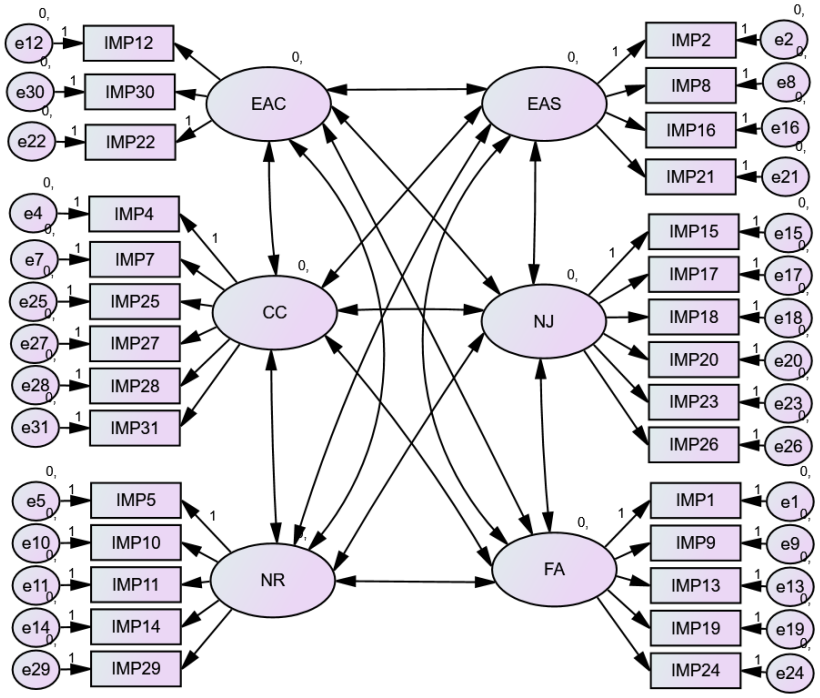
Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.830	.811	.898	.885	.897
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.056	.052	.061	.015
Independence model	.167	.163	.170	.000

de Bruin et al. (2014) - 29-item model (Model C.3)



Standardized Regression Weights: (Children - Default model)

	Estimate
IMP1 <--- FA	.719
IMP9 <--- FA	.781
IMP13 <--- FA	.762
IMP19 <--- FA	.778
IMP24 <--- FA	.735
IMP2 <--- EAS	.665
IMP8 <--- EAS	.646
IMP16 <--- EAS	.682
IMP21 <--- EAS	.768
IMP4 <--- CC	.632
IMP7 <--- CC	.564
IMP25 <--- CC	.650
IMP27 <--- CC	.695
IMP28 <--- CC	.712
IMP5 <--- NR	.708

	Estimate
IMP10 <--- NR	.340
IMP11 <--- NR	.640
IMP14 <--- NR	.768
IMP29 <--- NR	.761
IMP15 <--- NJ	.693
IMP17 <--- NJ	.698
IMP18 <--- NJ	.640
IMP20 <--- NJ	.589
IMP23 <--- NJ	.818
IMP26 <--- NJ	.637
IMP22 <--- EAC	.740
IMP30 <--- EAC	.844
IMP12 <--- EAC	.732
IMP31 <--- CC	.707

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	102	764.357	362	.000	2.111
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.858	.841	.920	.909	.919
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.053	.048	.058	.166
Independence model	.176	.172	.180	.000

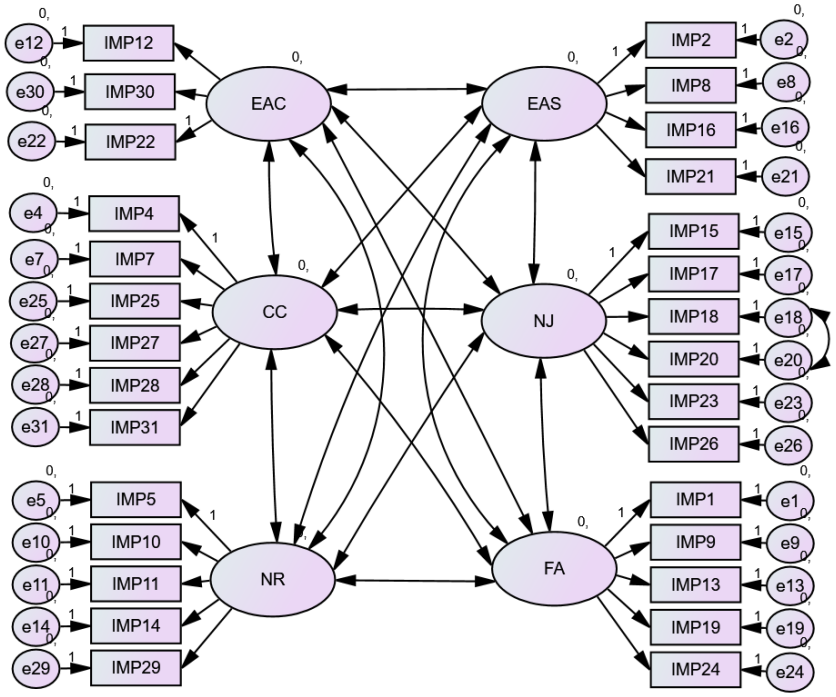
Modification Indices (Children - Default model)

Covariances: (Children - Default model)

	M.I.	Par Change
e12 <--> e31	6.743	-.038
e26 <--> e12	9.412	.082
e23 <--> FA	10.250	.050
e20 <--> NR	15.254	-.052
e20 <--> EAS	25.361	.072
e20 <--> e23	14.954	-.101
e18 <--> CC	7.315	.034
e18 <--> e23	7.433	-.065
e18 <--> e20	28.308	.135
e17 <--> NJ	8.993	.065
e15 <--> EAC	8.725	-.055
e15 <--> e17	12.272	.101
e29 <--> FA	12.245	-.044
e14 <--> e29	6.992	.044
e11 <--> FA	20.272	.066
e11 <--> e12	10.059	.063
e10 <--> NJ	8.578	.066
e25 <--> e20	6.117	-.047
e25 <--> e28	13.523	-.046
e25 <--> e27	16.582	.049
e4 <--> CC	7.955	-.029
e4 <--> FA	13.330	.047
e4 <--> e27	19.186	-.061
e4 <--> e7	11.328	.061

	M.I.	Par Change
e21 <--> e5	6.254	.042
e16 <--> CC	6.156	.027
e16 <--> e20	12.623	.079
e8 <--> e7	8.574	.054
e2 <--> CC	6.886	-.029
e2 <--> e21	8.099	.049
e24 <--> NR	17.667	-.036
e24 <--> CC	24.264	.044
e24 <--> EAS	10.405	.030
e24 <--> e20	8.718	.054
e24 <--> e18	12.235	.058
e24 <--> e17	6.630	-.049
e24 <--> e5	6.353	-.035
e24 <--> e16	6.542	.037
e19 <--> e23	6.795	.052
e19 <--> e18	11.787	-.066
e19 <--> e11	15.471	.075
e13 <--> e17	7.219	.061
e13 <--> e16	10.717	-.058
e9 <--> EAS	6.132	-.026
e1 <--> e5	6.077	.038
e1 <--> e19	6.967	.040

de Bruin et al. (2014) - 29-item model (Model C.4)



Standardized Regression Weights: (Children - Default model)

			Estimate
IMP1	<---	FA	.719
IMP9	<---	FA	.781
IMP13	<---	FA	.762
IMP19	<---	FA	.778
IMP24	<---	FA	.734
IMP2	<---	EAS	.666
IMP8	<---	EAS	.646
IMP16	<---	EAS	.681
IMP21	<---	EAS	.768
IMP4	<---	CC	.632
IMP7	<---	CC	.565
IMP25	<---	CC	.650
IMP27	<---	CC	.695
IMP28	<---	CC	.712
IMP5	<---	NR	.708

			Estimate
IMP10	<---	NR	.340
IMP11	<---	NR	.639
IMP14	<---	NR	.769
IMP29	<---	NR	.762
IMP15	<---	NJ	.696
IMP17	<---	NJ	.691
IMP18	<---	NJ	.605
IMP20	<---	NJ	.548
IMP23	<---	NJ	.838
IMP26	<---	NJ	.642
IMP22	<---	EAC	.740
IMP30	<---	EAC	.844
IMP12	<---	EAC	.732
IMP31	<---	CC	.707

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	103	733.532	361	.000	2.032
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.864	.847	.926	.916	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

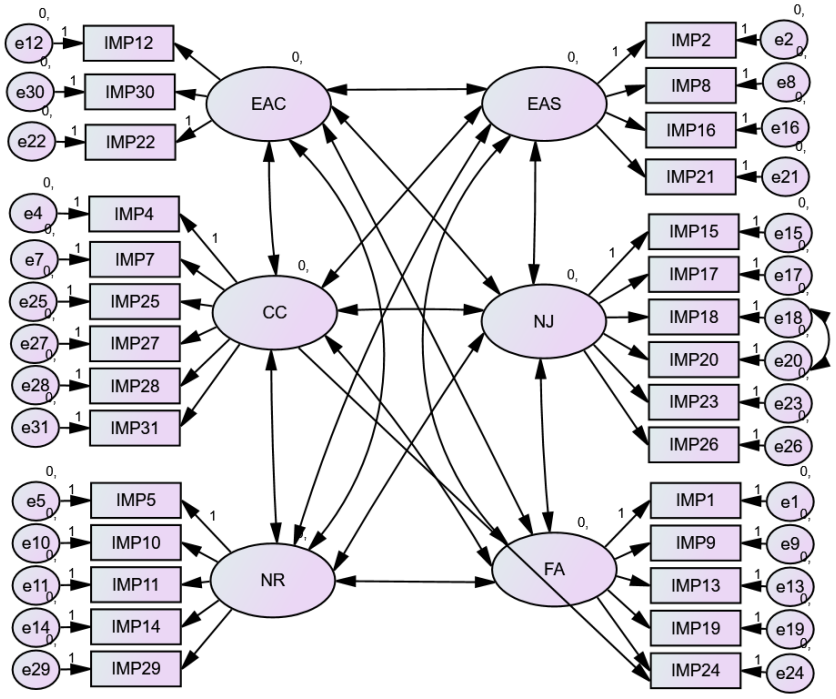
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.051	.046	.056	.358
Independence model	.176	.172	.180	.000

Modification Indices (Children - Default model)

Regression Weights: (Children - Default model)

			M.I.	Par Change
IMP26	<---	EAC	6.840	.255
IMP23	<---	FA	7.426	.195
IMP18	<---	CC	19.003	.345
IMP18	<---	EAS	11.108	.238
IMP18	<---	EAC	15.390	.278
IMP17	<---	NR	8.240	-.221
IMP17	<---	CC	12.479	-.330
IMP17	<---	EAS	13.453	-.308
IMP17	<---	FA	6.978	-.211
IMP15	<---	CC	12.902	-.324
IMP15	<---	EAS	8.473	-.237
IMP15	<---	FA	14.458	-.295
IMP15	<---	EAC	20.073	-.362
IMP11	<---	FA	10.419	.223
IMP4	<---	FA	11.331	.202
IMP24	<---	CC	21.494	.273
IMP24	<---	EAS	6.004	.130
IMP24	<---	EAC	10.200	.168

de Bruin et al. (2014) - 29-item model (Model C.5)



Standardized Regression Weights: (Children - Default model)

			Estimate
IMP1	<---	FA	.724
IMP9	<---	FA	.785
IMP13	<---	FA	.769
IMP19	<---	FA	.784
IMP24	<---	FA	.537
IMP2	<---	EAS	.664
IMP8	<---	EAS	.647
IMP16	<---	EAS	.683
IMP21	<---	EAS	.767
IMP4	<---	CC	.636
IMP7	<---	CC	.567
IMP25	<---	CC	.648
IMP27	<---	CC	.694
IMP28	<---	CC	.714
IMP5	<---	NR	.709

			Estimate
IMP10	<---	NR	.339
IMP11	<---	NR	.641
IMP14	<---	NR	.769
IMP29	<---	NR	.760
IMP15	<---	NJ	.695
IMP17	<---	NJ	.692
IMP18	<---	NJ	.604
IMP20	<---	NJ	.548
IMP23	<---	NJ	.838
IMP26	<---	NJ	.642
IMP22	<---	EAC	.739
IMP30	<---	EAC	.845
IMP12	<---	EAC	.732
IMP31	<---	CC	.703
IMP24	<---	CC	.318

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	104	693.409	360	.000	1.926
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

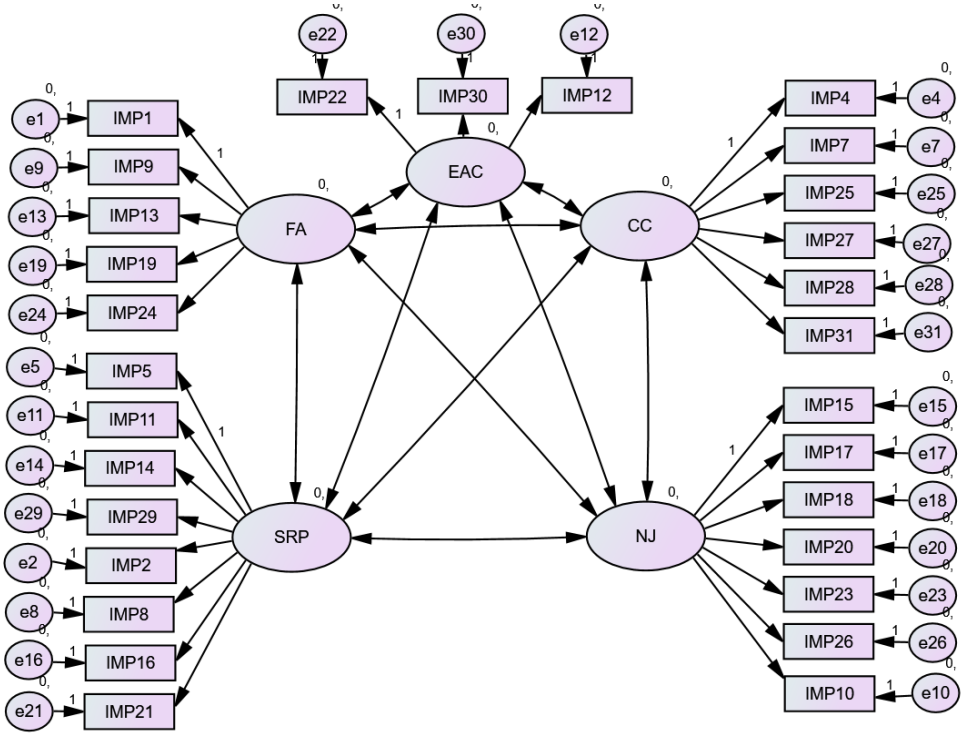
Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.871	.855	.934	.924	.933
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.043	.054	.678
Independence model	.176	.172	.180	.000

Moreira and Canavarro (2017) – 29-item model (Model C.6)



Standardized Regression Weights: (Children - Default model)

	Estimate
IMP1 <--- FA	.719
IMP9 <--- FA	.777
IMP13 <--- FA	.760
IMP19 <--- FA	.777
IMP24 <--- FA	.741
IMP4 <--- CC	.630
IMP7 <--- CC	.561
IMP25 <--- CC	.653
IMP27 <--- CC	.697
IMP28 <--- CC	.711
IMP5 <--- SRP	.696
IMP11 <--- SRP	.619
IMP14 <--- SRP	.754
IMP29 <--- SRP	.753
IMP15 <--- NJ	.687

	Estimate
IMP17 <--- NJ	.696
IMP18 <--- NJ	.648
IMP20 <--- NJ	.607
IMP23 <--- NJ	.809
IMP26 <--- NJ	.632
IMP22 <--- EAC	.741
IMP30 <--- EAC	.842
IMP31 <--- CC	.707
IMP10 <--- NJ	.364
IMP12 <--- EAC	.733
IMP2 <--- SRP	.608
IMP8 <--- SRP	.591
IMP16 <--- SRP	.647
IMP21 <--- SRP	.719

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	97	835.128	367	.000	2.276
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.845	.828	.907	.896	.906
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.057	.052	.062	.014
Independence model	.176	.172	.180	.000

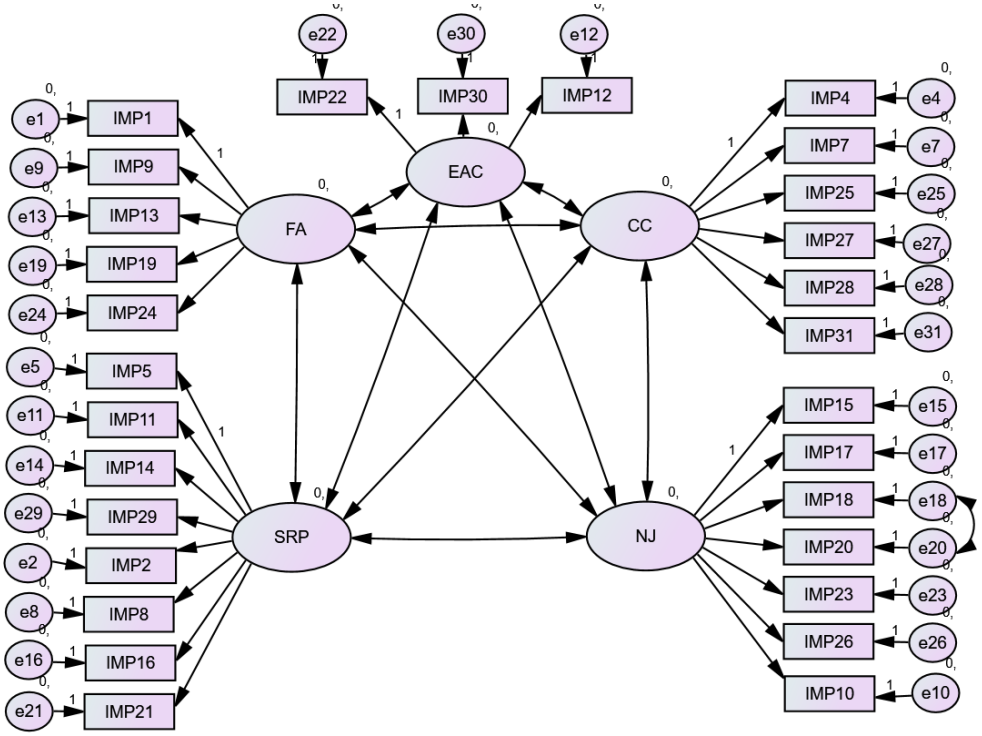
Modification Indices (Children - Default model)

Covariances: (Children - Default model)

	M.I.	Par Change
e16 <--> CC	9.781	.034
e16 <--> FA	6.529	-.034
e8 <--> CC	7.023	.029
e2 <--> NJ	10.325	-.058
e2 <--> SRP	7.167	.031
e2 <--> e21	26.662	.096
e31 <--> e12	6.895	-.038
e26 <--> e12	9.050	.081
e23 <--> FA	11.338	.054
e20 <--> e16	16.611	.091
e20 <--> e23	18.287	-.111
e18 <--> CC	7.903	.035
e18 <--> e23	7.487	-.065
e18 <--> e20	24.058	.122
e17 <--> NJ	11.111	.074
e17 <--> SRP	10.006	-.046
e15 <--> NJ	6.848	.057
e15 <--> EAC	8.767	-.055
e15 <--> e17	13.551	.107
e29 <--> NJ	7.236	.045
e29 <--> e20	7.053	-.057
e14 <--> e8	7.156	-.048
e14 <--> e20	6.253	-.054
e14 <--> e29	11.345	.057
e11 <--> FA	26.861	.078
e11 <--> e12	10.385	.065

	M.I.	Par Change
e5 <--> FA	6.859	.033
e27 <--> e10	6.367	-.047
e25 <--> e28	14.019	-.046
e25 <--> e27	15.722	.048
e7 <--> e8	10.204	.061
e4 <--> CC	7.532	-.029
e4 <--> FA	12.962	.047
e4 <--> e27	19.257	-.061
e4 <--> e7	11.911	.062
e24 <--> CC	29.589	.048
e24 <--> e16	12.309	.052
e24 <--> e8	6.700	.038
e24 <--> e20	7.323	.048
e24 <--> e18	10.979	.055
e24 <--> e17	7.876	-.053
e24 <--> e5	10.658	-.046
e19 <--> e23	6.815	.053
e19 <--> e18	12.491	-.068
e19 <--> e11	17.592	.081
e19 <--> e5	7.321	.044
e13 <--> e16	14.357	-.068
e13 <--> e17	8.143	.066
e13 <--> e14	8.757	.052
e1 <--> e5	7.201	.041
e1 <--> e19	7.063	.040

Moreira and Canavarro (2017) – 29-item model (Model C.7)



Standardized Regression Weights: (Children - Default model)

	Estimate
IMP1 <--- FA	.719
IMP9 <--- FA	.778
IMP13 <--- FA	.760
IMP19 <--- FA	.777
IMP24 <--- FA	.740
IMP4 <--- CC	.630
IMP7 <--- CC	.562
IMP25 <--- CC	.653
IMP27 <--- CC	.697
IMP28 <--- CC	.712
IMP5 <--- SRP	.697
IMP11 <--- SRP	.619
IMP14 <--- SRP	.755
IMP29 <--- SRP	.754
IMP15 <--- NJ	.692

	Estimate
IMP17 <--- NJ	.692
IMP18 <--- NJ	.613
IMP20 <--- NJ	.567
IMP23 <--- NJ	.830
IMP26 <--- NJ	.638
IMP22 <--- EAC	.741
IMP30 <--- EAC	.842
IMP31 <--- CC	.707
IMP10 <--- NJ	.360
IMP12 <--- EAC	.733
IMP2 <--- SRP	.608
IMP8 <--- SRP	.590
IMP16 <--- SRP	.646
IMP21 <--- SRP	.719

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	98	808.737	366	.000	2.210
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.850	.833	.912	.901	.911
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

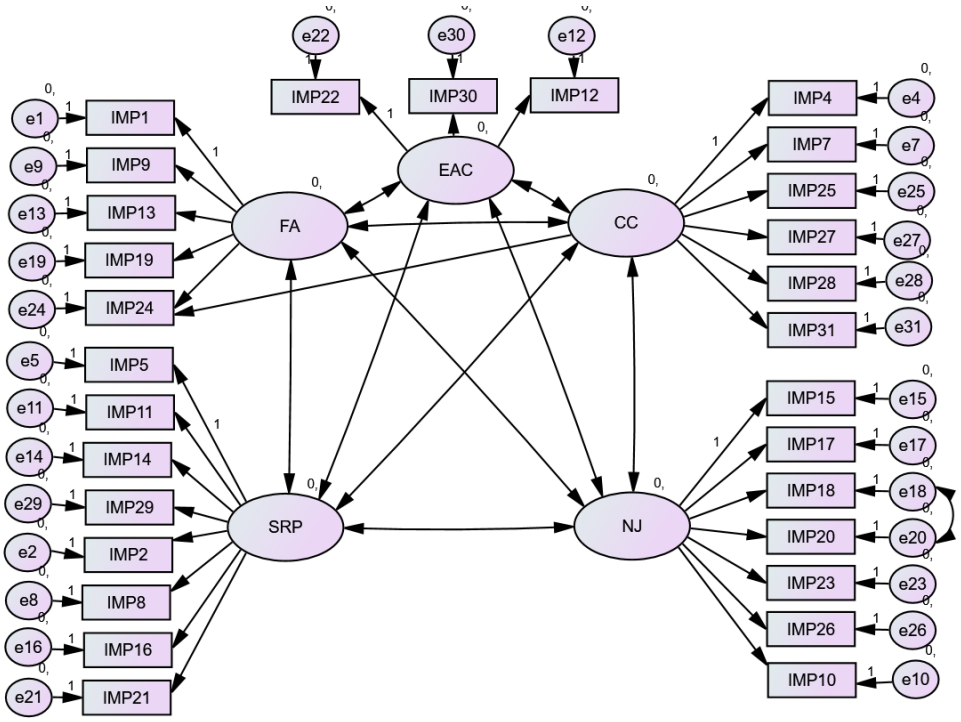
RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.055	.050	.060	.044
Independence model	.176	.172	.180	.000

Modification Indices (Children - Default model)
Regression Weights: (Children - Default model)

			M.I.	Par Change
IMP26	<---	EAC	6.931	.257
IMP23	<---	FA	7.316	.196
IMP18	<---	SRP	7.651	.183
IMP18	<---	CC	18.361	.341
IMP18	<---	EAC	15.262	.277
IMP17	<---	SRP	11.595	-.266
IMP17	<---	CC	13.617	-.346
IMP17	<---	FA	7.379	-.218
IMP15	<---	SRP	6.699	-.196
IMP15	<---	CC	13.441	-.334
IMP15	<---	FA	14.538	-.297
IMP15	<---	EAC	20.020	-.363
IMP11	<---	FA	14.818	.270
IMP4	<---	NJ	6.292	.117
IMP4	<---	FA	11.687	.205
IMP24	<---	CC	19.696	.261
IMP24	<---	EAC	9.440	.161

Moreira and Canavarro (2017) – 29-item model (Model C.8)



Standardized Regression Weights: (Children - Default model)

	Estimate
IMP1 <--- FA	.719
IMP9 <--- FA	.778
IMP13 <--- FA	.760
IMP19 <--- FA	.777
IMP24 <--- FA	.739
IMP4 <--- CC	.629
IMP7 <--- CC	.562
IMP25 <--- CC	.653
IMP27 <--- CC	.697
IMP28 <--- CC	.712
IMP5 <--- SRP	.699
IMP11 <--- SRP	.624
IMP14 <--- SRP	.760
IMP29 <--- SRP	.761
IMP15 <--- NJ	.692

	Estimate
IMP17 <--- NJ	.691
IMP18 <--- NJ	.613
IMP20 <--- NJ	.566
IMP23 <--- NJ	.831
IMP26 <--- NJ	.639
IMP22 <--- EAC	.741
IMP30 <--- EAC	.842
IMP31 <--- CC	.707
IMP10 <--- NJ	.361
IMP12 <--- EAC	.733
IMP2 <--- SRP	.575
IMP8 <--- SRP	.582
IMP16 <--- SRP	.642
IMP21 <--- SRP	.696

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	99	780.156	365	.000	2.137
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.855	.839	.917	.907	.916
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.054	.048	.059	.121
Independence model	.176	.172	.180	.000

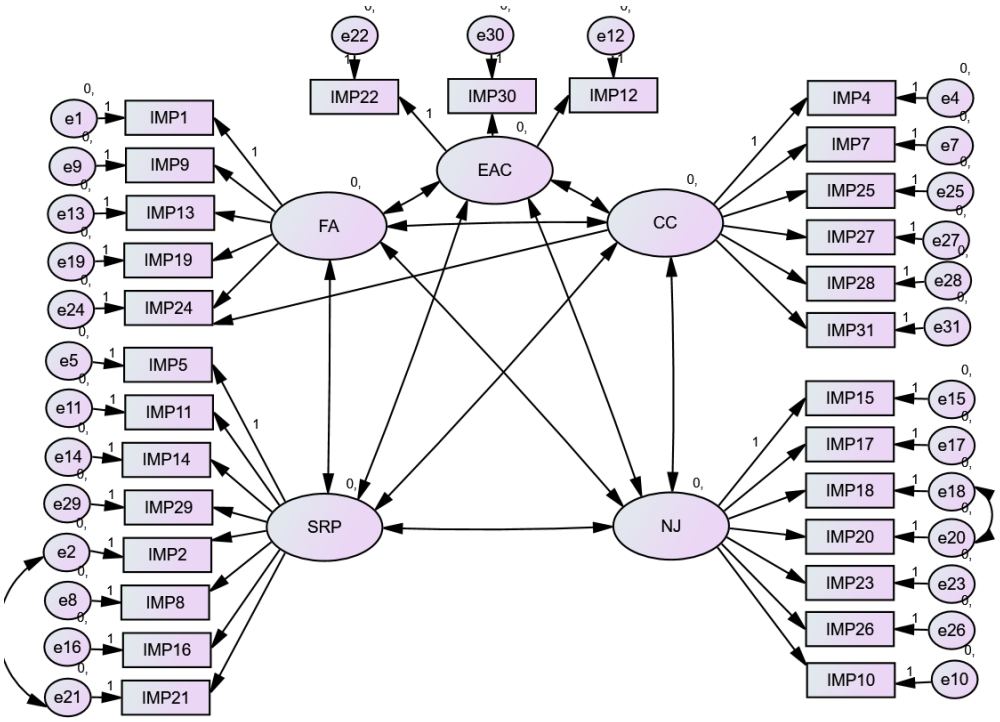
Modification Indices (Children - Default model)

Covariances: (Children - Default model)

	M.I.	Par Change
e21 <--> NJ	6.372	-.045
e16 <--> CC	9.591	.034
e16 <--> FA	6.210	-.034
e8 <--> CC	6.848	.029
e2 <--> NJ	11.345	-.062
e2 <--> SRP	7.509	.032
e2 <--> e21	26.941	.096
e31 <--> e12	6.866	-.038
e26 <--> e12	8.744	.079
e23 <--> FA	9.967	.049
e20 <--> e16	13.013	.078
e20 <--> e23	8.607	-.073
e18 <--> CC	6.060	.030
e17 <--> NJ	9.895	.071
e17 <--> SRP	8.925	-.044
e17 <--> e20	6.672	.072
e15 <--> NJ	7.015	.058
e15 <--> FA	6.011	-.041
e15 <--> EAC	8.600	-.055
e15 <--> e17	13.460	.106
e29 <--> NJ	8.383	.049
e14 <--> e8	7.168	-.048
e14 <--> e29	10.892	.055
e11 <--> FA	26.681	.078
e11 <--> e12	10.338	.065

	M.I.	Par Change
e5 <--> FA	6.741	.033
e27 <--> e10	6.297	-.047
e25 <--> e28	14.009	-.046
e25 <--> e27	15.835	.048
e7 <--> e8	10.177	.061
e4 <--> CC	7.476	-.028
e4 <--> FA	12.956	.047
e4 <--> e27	19.188	-.061
e4 <--> e7	11.864	.062
e24 <--> CC	29.029	.048
e24 <--> e16	12.517	.052
e24 <--> e8	6.852	.039
e24 <--> e18	6.952	.042
e24 <--> e17	6.490	-.048
e24 <--> e5	10.483	-.045
e19 <--> e23	6.250	.050
e19 <--> e18	14.024	-.070
e19 <--> e11	17.486	.081
e19 <--> e5	7.237	.044
e13 <--> e16	14.208	-.068
e13 <--> e17	7.711	.064
e13 <--> e14	8.696	.051
e1 <--> e5	7.140	.041
e1 <--> e19	6.981	.040

Moreira and Canavarro (2017) – 29-item model (Model C.9)



Standardized Regression Weights: (Children - Default model)

	Estimate
IMP1 <--- FA	.725
IMP9 <--- FA	.782
IMP13 <--- FA	.767
IMP19 <--- FA	.784
IMP24 <--- FA	.550
IMP4 <--- CC	.632
IMP7 <--- CC	.564
IMP25 <--- CC	.652
IMP27 <--- CC	.698
IMP28 <--- CC	.714
IMP5 <--- SRP	.698
IMP11 <--- SRP	.623
IMP14 <--- SRP	.760
IMP29 <--- SRP	.761
IMP15 <--- NJ	.692

	Estimate
IMP17 <--- NJ	.691
IMP18 <--- NJ	.612
IMP20 <--- NJ	.565
IMP23 <--- NJ	.831
IMP26 <--- NJ	.639
IMP22 <--- EAC	.740
IMP30 <--- EAC	.843
IMP31 <--- CC	.705
IMP10 <--- NJ	.361
IMP12 <--- EAC	.733
IMP2 <--- SRP	.576
IMP8 <--- SRP	.583
IMP16 <--- SRP	.643
IMP21 <--- SRP	.697
IMP24 <--- CC	.304

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	100	743.533	364	.000	2.043
Saturated model	464	.000	0		
Independence model	58	5377.678	406	.000	13.246

Baseline Comparisons

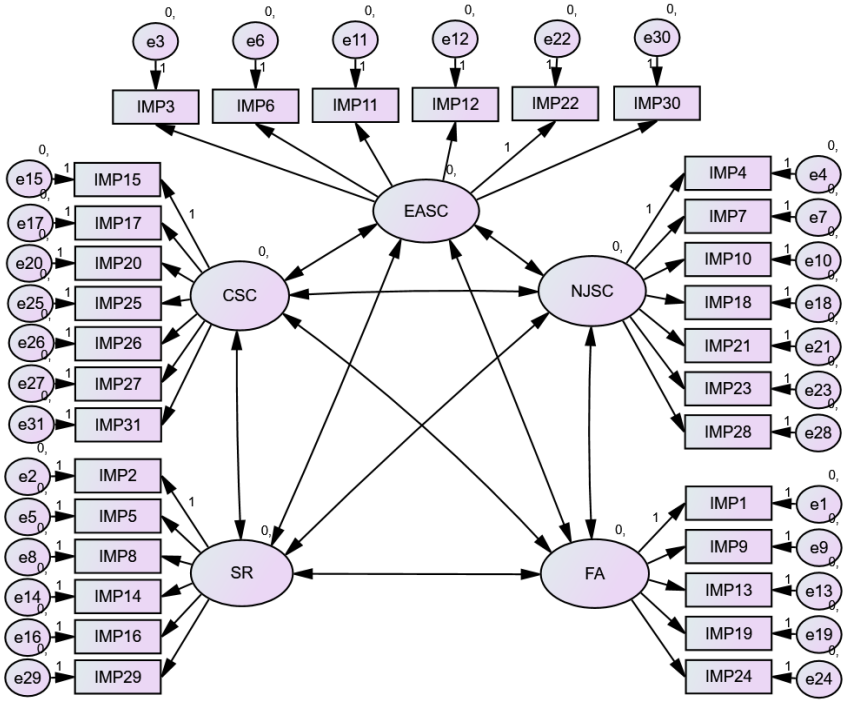
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.862	.846	.924	.915	.924
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.051	.046	.057	.327
Independence model	.176	.172	.180	.000

Model fit for infants

Duncan et al. (2009) model (Model I.1)



Regression Weights: (Infants - Default model)

			Estimate	S.E.	C.R.	P
IMP1	<---	FA	1.000			
IMP9	<---	FA	1.055	.104	10.177	***
IMP13	<---	FA	1.141	.108	10.531	***
IMP19	<---	FA	1.178	.108	10.946	***
IMP24	<---	FA	.920	.087	10.561	***
IMP15	<---	CSC	1.000			
IMP17	<---	CSC	1.046	.192	5.463	***
IMP20	<---	CSC	1.070	.180	5.959	***
IMP25	<---	CSC	.821	.126	6.493	***
IMP26	<---	CSC	1.528	.250	6.118	***
IMP2	<---	SR	1.000			
IMP5	<---	SR	1.200	.137	8.786	***
IMP8	<---	SR	.846	.129	6.548	***
IMP14	<---	SR	1.404	.148	9.500	***
IMP16	<---	SR	1.075	.118	9.120	***
IMP4	<---	NJSC	1.000			
IMP7	<---	NJSC	1.320	.204	6.473	***
IMP10	<---	NJSC	.705	.194	3.632	***
IMP18	<---	NJSC	1.346	.215	6.263	***
IMP21	<---	NJSC	1.503	.226	6.657	***
IMP23	<---	NJSC	1.781	.299	5.966	***
IMP22	<---	EASC	1.000			
IMP30	<---	EASC	.872	.101	8.659	***
IMP27	<---	CSC	.808	.124	6.533	***
IMP12	<---	EASC	1.017	.120	8.474	***
IMP11	<---	EASC	1.028	.129	7.955	***

			Estimate	S.E.	C.R.	P
IMP6	<---	EASC	.051	.107	.477	.633
IMP3	<---	EASC	.047	.100	.470	.638
IMP31	<---	CSC	1.044	.152	6.888	***
IMP28	<---	NJSC	1.426	.216	6.609	***
IMP29	<---	SR	1.485	.151	9.834	***

Standardized Regression Weights: (Infants - Default model)

			Estimate
IMP1	<---	FA	.655
IMP9	<---	FA	.685
IMP13	<---	FA	.716
IMP19	<---	FA	.755
IMP24	<---	FA	.719
IMP15	<---	CSC	.415
IMP17	<---	CSC	.429
IMP20	<---	CSC	.503
IMP25	<---	CSC	.607
IMP26	<---	CSC	.531
IMP2	<---	SR	.558
IMP5	<---	SR	.655
IMP8	<---	SR	.437
IMP14	<---	SR	.746
IMP16	<---	SR	.695
IMP4	<---	NJSC	.410

			Estimate
IMP7	<---	NJSC	.605
IMP10	<---	NJSC	.240
IMP18	<---	NJSC	.560
IMP21	<---	NJSC	.651
IMP23	<---	NJSC	.505
IMP22	<---	EASC	.609
IMP30	<---	EASC	.667
IMP27	<---	CSC	.616
IMP12	<---	EASC	.644
IMP11	<---	EASC	.587
IMP6	<---	EASC	.030
IMP3	<---	EASC	.030
IMP31	<---	CSC	.712
IMP28	<---	NJSC	.639
IMP29	<---	SR	.795

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	103	1437.167	424	.000	3.390
Saturated model	527	.000	0		
Independence model	62	4185.866	465	.000	9.002

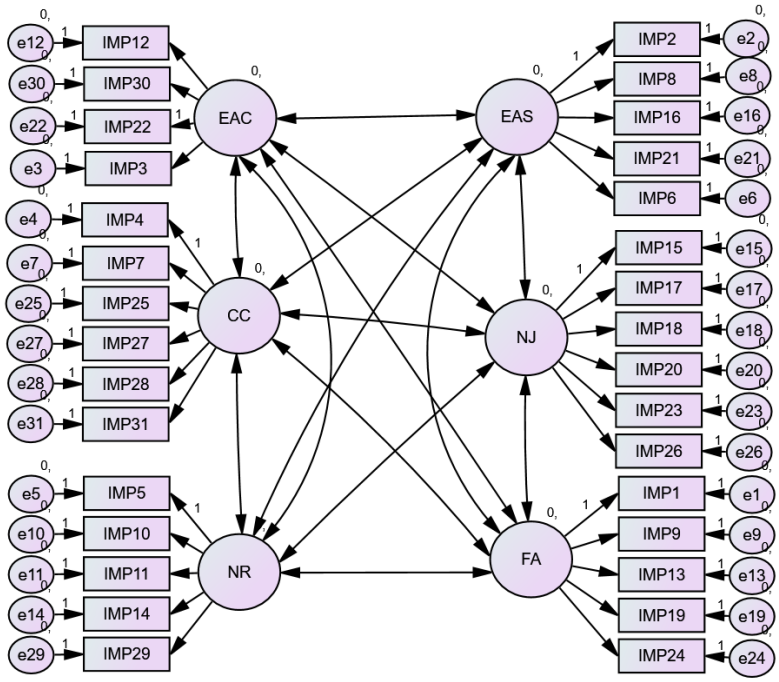
Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.657	.623	.731	.701	.728
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.087	.082	.091	.000
Independence model	.158	.154	.163	.000

de Bruin et al. (2014) – 31-item model (Model I.2)



Regression Weights: (Infants - Default model)

			Estimate	S.E.	C.R.	P
IMP1	<---	FA	1.000			
IMP9	<---	FA	1.056	.104	10.144	***
IMP13	<---	FA	1.144	.109	10.505	***
IMP19	<---	FA	1.183	.108	10.922	***
IMP24	<---	FA	.923	.088	10.541	***
IMP2	<---	EAS	1.000			
IMP8	<---	EAS	.823	.107	7.725	***
IMP16	<---	EAS	.948	.090	10.522	***
IMP21	<---	EAS	1.033	.098	10.495	***
IMP4	<---	CC	1.000			
IMP7	<---	CC	1.299	.183	7.079	***
IMP25	<---	CC	1.063	.149	7.113	***
IMP27	<---	CC	1.137	.154	7.397	***
IMP28	<---	CC	1.456	.198	7.344	***
IMP5	<---	NR	1.000			
IMP10	<---	NR	.287	.105	2.740	***
IMP11	<---	NR	1.067	.100	10.638	***
IMP14	<---	NR	1.156	.099	11.729	***
IMP29	<---	NR	1.246	.100	12.498	***
IMP15	<---	NJ	1.000			
IMP17	<---	NJ	1.017	.078	13.004	***
IMP18	<---	NJ	.640	.059	10.776	***
IMP20	<---	NJ	.795	.068	11.622	***
IMP23	<---	NJ	1.124	.087	12.968	***
IMP26	<---	NJ	.977	.093	10.516	***
IMP22	<---	EAC	1.000			
IMP30	<---	EAC	.880	.088	10.004	***
IMP12	<---	EAC	.864	.096	9.026	***

			Estimate	S.E.	C.R.	P
IMP31	<---	CC	1.326	.177	7.511	***
IMP6	<---	EAS	.167	.098	1.714	.087
IMP3	<---	EAC	.138	.088	1.576	.115

Standardized Regression Weights: (Infants - Default model)

			Estimate
IMP1	<---	FA	.653
IMP9	<---	FA	.685
IMP13	<---	FA	.716
IMP19	<---	FA	.756
IMP24	<---	FA	.720
IMP2	<---	EAS	.650
IMP8	<---	EAS	.495
IMP16	<---	EAS	.715
IMP21	<---	EAS	.713
IMP4	<---	CC	.445
IMP7	<---	CC	.646
IMP25	<---	CC	.653
IMP27	<---	CC	.721
IMP28	<---	CC	.707
IMP5	<---	NR	.675
IMP10	<---	NR	.165

			Estimate
IMP11	<---	NR	.677
IMP14	<---	NR	.760
IMP29	<---	NR	.826
IMP15	<---	NJ	.755
IMP17	<---	NJ	.758
IMP18	<---	NJ	.631
IMP20	<---	NJ	.679
IMP23	<---	NJ	.755
IMP26	<---	NJ	.617
IMP22	<---	EAC	.696
IMP30	<---	EAC	.769
IMP12	<---	EAC	.625
IMP31	<---	CC	.752
IMP6	<---	EAS	.104
IMP3	<---	EAC	.100

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	108	791.749	419	.000	1.890
Saturated model	527	.000	0		
Independence model	62	4185.866	465	.000	9.002

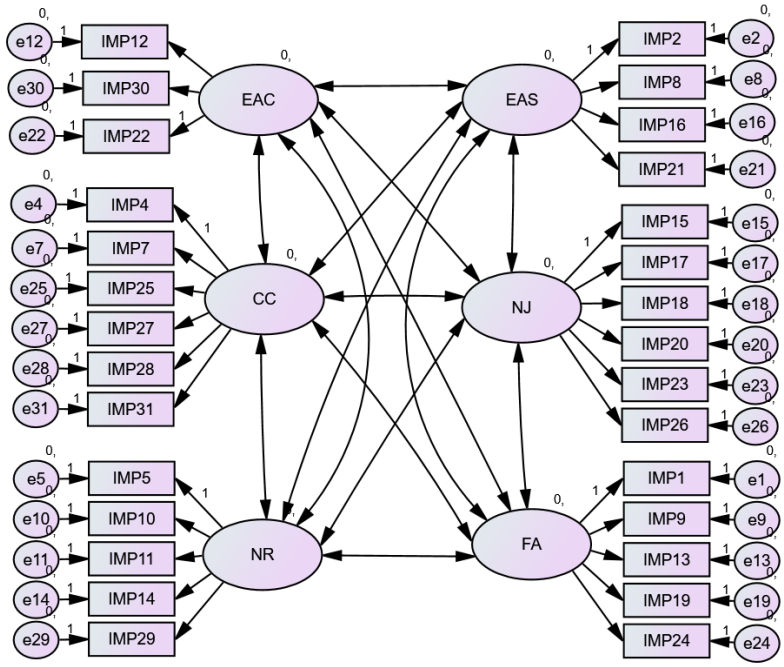
Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.811	.790	.901	.889	.900
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.053	.047	.058	.202
Independence model	.158	.154	.163	.000

de Bruin et al. (2014) – 29-item model (Model I.3)



Standardized Regression Weights: (Infants - Default model)

	Estimate
IMP1 <--- FA	.653
IMP9 <--- FA	.685
IMP13 <--- FA	.716
IMP19 <--- FA	.755
IMP24 <--- FA	.720
IMP2 <--- EAS	.647
IMP8 <--- EAS	.492
IMP16 <--- EAS	.716
IMP21 <--- EAS	.713
IMP4 <--- CC	.444
IMP7 <--- CC	.646
IMP25 <--- CC	.654
IMP27 <--- CC	.721
IMP28 <--- CC	.707
IMP5 <--- NR	.675

	Estimate
IMP10 <--- NR	.165
IMP11 <--- NR	.677
IMP14 <--- NR	.760
IMP29 <--- NR	.825
IMP15 <--- NJ	.754
IMP17 <--- NJ	.757
IMP18 <--- NJ	.632
IMP20 <--- NJ	.679
IMP23 <--- NJ	.755
IMP26 <--- NJ	.617
IMP22 <--- EAC	.696
IMP30 <--- EAC	.771
IMP12 <--- EAC	.623
IMP31 <--- CC	.753

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	102	669.273	362	.000	1.849
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.835	.815	.917	.906	.916
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.045	.058	.328
Independence model	.168	.163	.173	.000

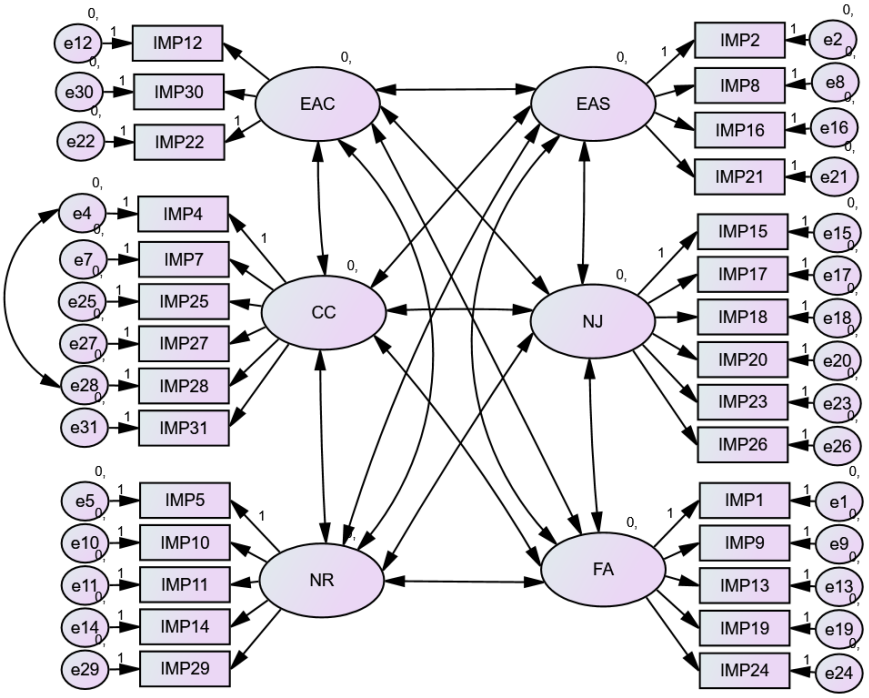
Modification Indices (Infants - Default model)

Covariances: (Infants - Default model)

	M.I.	Par Change
e22 <--> e31	6.403	-.042
e26 <--> e22	6.725	.095
e23 <--> FA	9.622	.061
e20 <--> NR	7.453	-.043
e20 <--> EAS	8.425	.045
e18 <--> EAS	13.400	.051
e18 <--> e20	6.556	.064
e17 <--> FA	7.429	-.048
e15 <--> EAS	7.848	-.046
e15 <--> EAC	7.656	-.064
e14 <--> e29	11.045	.059
e11 <--> NR	11.435	-.050
e11 <--> FA	9.094	.048
e10 <--> NJ	16.881	.158
e10 <--> EAC	6.613	.076
e10 <--> e14	6.490	-.080
e10 <--> e11	6.788	.093
e28 <--> EAC	11.840	.059
e28 <--> e22	14.342	.076
e27 <--> EAS	6.592	-.023

	M.I.	Par Change
e27 <--> e10	6.274	-.055
e25 <--> EAC	7.636	-.039
e25 <--> e31	8.886	.034
e25 <--> e14	11.732	.052
e7 <--> e31	11.260	-.048
e4 <--> NR	6.664	-.042
e4 <--> e31	12.497	-.064
e4 <--> e28	18.418	.095
e4 <--> e27	12.178	-.058
e4 <--> e7	16.642	.094
e21 <--> e20	6.973	.059
e21 <--> e18	7.713	.056
e21 <--> e14	12.925	-.068
e16 <--> e31	6.649	.034
e8 <--> e4	13.135	.112
e2 <--> e29	6.391	-.050
e2 <--> e21	6.473	.052
e24 <--> e17	6.643	-.048
e1 <--> e20	7.954	-.063

de Bruin et al. (2014) – 29-item model (Model I.4)



Standardized Regression Weights: (Infants - Default model)

			Estimate
IMP1	<---	FA	.653
IMP9	<---	FA	.685
IMP13	<---	FA	.717
IMP19	<---	FA	.755
IMP24	<---	FA	.720
IMP2	<---	EAS	.648
IMP8	<---	EAS	.489
IMP16	<---	EAS	.717
IMP21	<---	EAS	.713
IMP4	<---	CC	.397
IMP7	<---	CC	.630
IMP25	<---	CC	.664
IMP27	<---	CC	.731
IMP28	<---	CC	.685
IMP5	<---	NR	.674

			Estimate
IMP10	<---	NR	.164
IMP11	<---	NR	.677
IMP14	<---	NR	.761
IMP29	<---	NR	.825
IMP15	<---	NJ	.754
IMP17	<---	NJ	.757
IMP18	<---	NJ	.632
IMP20	<---	NJ	.679
IMP23	<---	NJ	.755
IMP26	<---	NJ	.617
IMP22	<---	EAC	.694
IMP30	<---	EAC	.773
IMP12	<---	EAC	.622
IMP31	<---	CC	.769

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	103	649.218	361	.000	1.798
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.840	.820	.922	.911	.921
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.044	.056	.489
Independence model	.168	.163	.173	.000

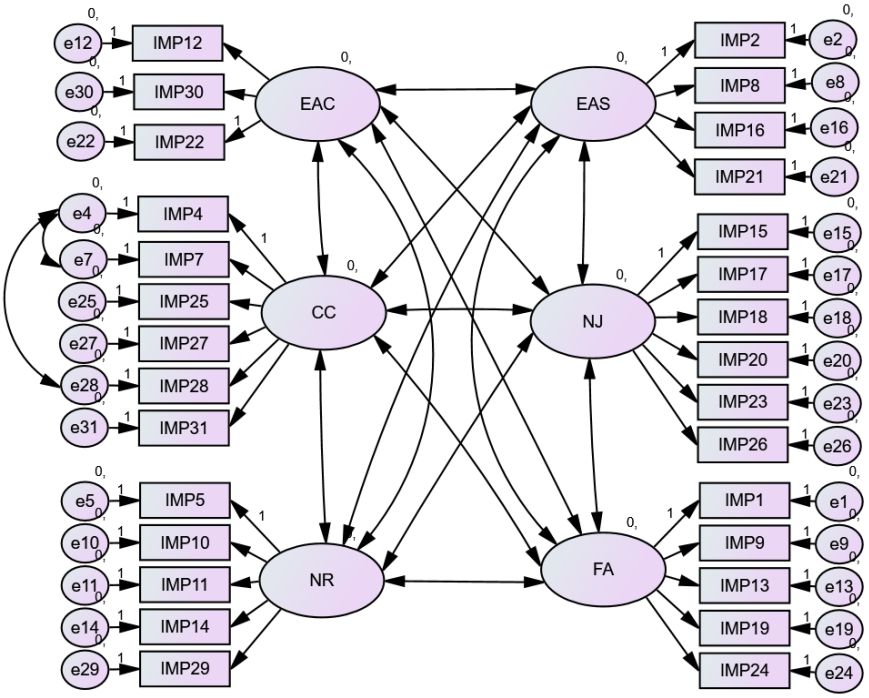
Modification Indices (Infants - Default model)

Covariances: (Infants - Default model)

	M.I.	Par Change
e22 <--> e31	6.136	-.040
e26 <--> e22	6.808	.096
e23 <--> FA	9.531	.061
e20 <--> NR	7.551	-.044
e20 <--> EAS	8.394	.045
e18 <--> EAS	13.809	.052
e18 <--> e20	6.557	.064
e17 <--> FA	7.487	-.049
e15 <--> EAS	7.923	-.046
e15 <--> EAC	7.743	-.064
e14 <--> e29	10.701	.058
e11 <--> NR	11.328	-.049
e11 <--> FA	9.091	.048
e10 <--> NJ	16.932	.158
e10 <--> EAC	6.743	.076
e10 <--> e14	6.425	-.080
e10 <--> e11	6.871	.093
e28 <--> EAC	11.551	.057

	M.I.	Par Change
e28 <--> e22	12.774	.070
e27 <--> EAS	7.165	-.024
e25 <--> EAC	7.406	-.038
e25 <--> e14	10.661	.049
e7 <--> e31	11.416	-.048
e4 <--> EAS	6.181	.039
e4 <--> FA	6.236	.042
e4 <--> e27	8.821	-.048
e4 <--> e7	17.639	.095
e21 <--> e20	6.941	.059
e21 <--> e18	7.841	.057
e21 <--> e14	12.971	-.069
e8 <--> e4	10.412	.098
e2 <--> e29	6.494	-.050
e2 <--> e21	6.357	.051
e24 <--> e17	6.663	-.048
e1 <--> e20	7.953	-.063

de Bruin et al. (2014) – 29-item model (Model I.5)



Standardized Regression Weights: (Infants - Default model)

			Estimate
IMP1	<---	FA	.654
IMP9	<---	FA	.685
IMP13	<---	FA	.717
IMP19	<---	FA	.755
IMP24	<---	FA	.719
IMP2	<---	EAS	.648
IMP8	<---	EAS	.487
IMP16	<---	EAS	.717
IMP21	<---	EAS	.713
IMP4	<---	CC	.371
IMP7	<---	CC	.622
IMP25	<---	CC	.666
IMP27	<---	CC	.738
IMP28	<---	CC	.683
IMP5	<---	NR	.674

			Estimate
IMP10	<---	NR	.163
IMP11	<---	NR	.677
IMP14	<---	NR	.761
IMP29	<---	NR	.825
IMP15	<---	NJ	.754
IMP17	<---	NJ	.757
IMP18	<---	NJ	.632
IMP20	<---	NJ	.679
IMP23	<---	NJ	.755
IMP26	<---	NJ	.617
IMP22	<---	EAC	.693
IMP30	<---	EAC	.774
IMP12	<---	EAC	.621
IMP31	<---	CC	.774

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	104	630.757	360	.000	1.752
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

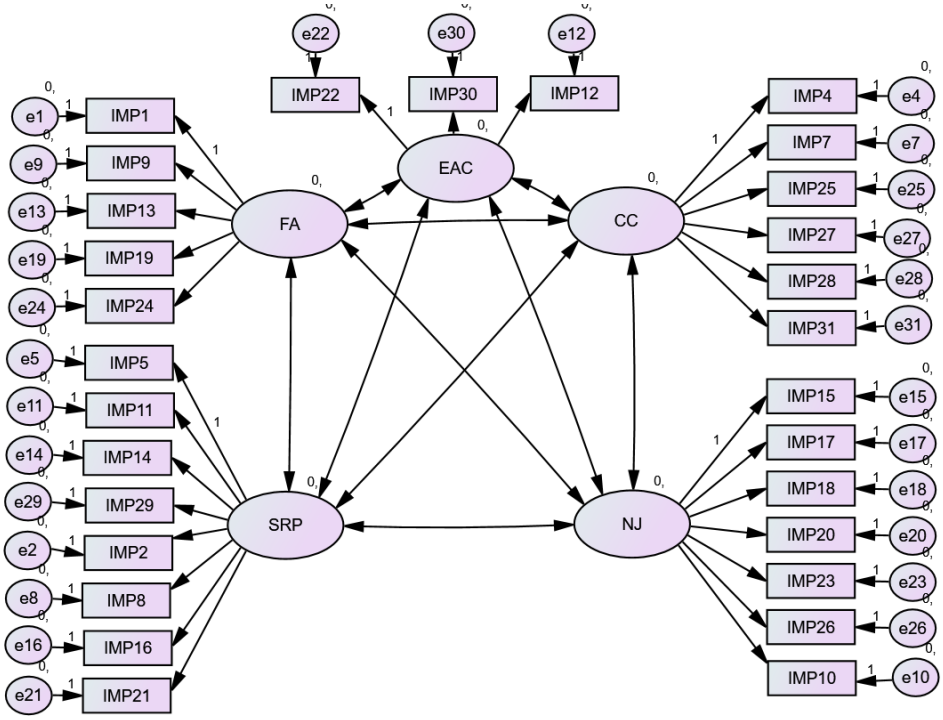
Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.845	.825	.927	.916	.926
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.042	.055	.641
Independence model	.168	.163	.173	.000

Moreira and Canavarro (2017) – 29-item model (Model I.6)



Standardized Regression Weights: (Infants - Default model)

			Estimate
IMP1	<---	FA	.654
IMP9	<---	FA	.685
IMP13	<---	FA	.715
IMP19	<---	FA	.755
IMP24	<---	FA	.721
IMP4	<---	CC	.435
IMP7	<---	CC	.639
IMP25	<---	CC	.658
IMP27	<---	CC	.729
IMP28	<---	CC	.705
IMP5	<---	SRP	.655
IMP11	<---	SRP	.681
IMP14	<---	SRP	.715
IMP29	<---	SRP	.781
IMP15	<---	NJ	.753

			Estimate
IMP17	<---	NJ	.752
IMP18	<---	NJ	.635
IMP20	<---	NJ	.681
IMP23	<---	NJ	.755
IMP26	<---	NJ	.622
IMP22	<---	EAC	.694
IMP30	<---	EAC	.771
IMP31	<---	CC	.753
IMP10	<---	NJ	.280
IMP12	<---	EAC	.624
IMP2	<---	SRP	.587
IMP8	<---	SRP	.444
IMP16	<---	SRP	.690
IMP21	<---	SRP	.687

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	97	705.055	367	.000	1.921
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.826	.808	.908	.898	.907
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.054	.048	.060	.150
Independence model	.168	.163	.173	.000

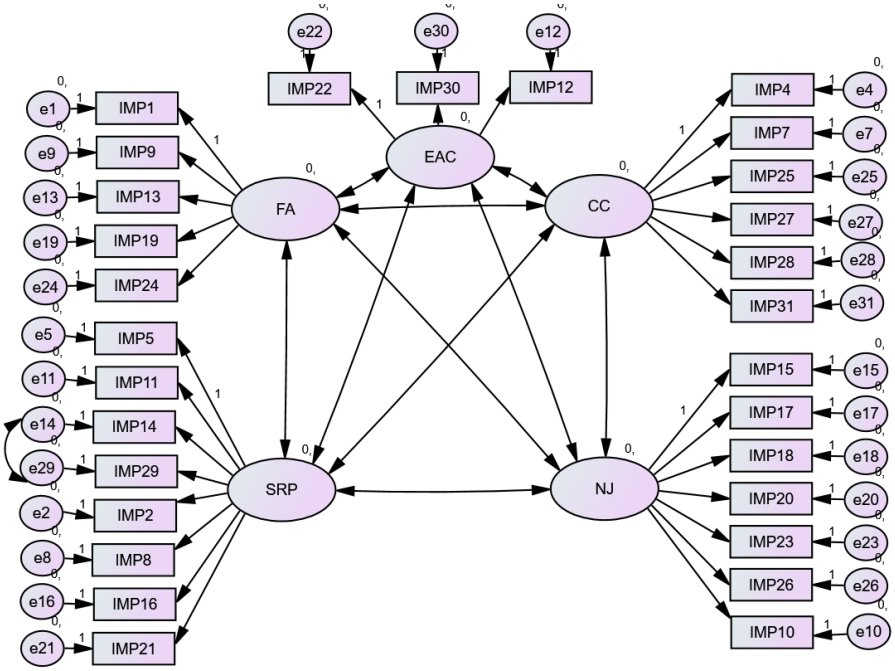
Modification Indices (Infants - Default model)

Covariances: (Infants - Default model)

	M.I.	Par Change
e8 <--> SRP	7.419	-.046
e8 <--> CC	9.792	.037
e2 <--> e21	16.620	.087
e10 <--> EAC	7.666	.080
e31 <--> SRP	9.408	.029
e31 <--> e16	7.070	.035
e22 <--> e31	6.181	-.041
e26 <--> e22	6.495	.093
e23 <--> FA	9.378	.060
e23 <--> e21	6.160	-.066
e20 <--> e21	9.790	.071
e18 <--> e21	11.611	.069
e18 <--> e16	6.959	.049
e18 <--> e20	6.054	.061
e17 <--> FA	7.594	-.049
e17 <--> e16	6.847	-.057
e15 <--> EAC	9.638	-.071
e15 <--> e2	6.530	-.070
e15 <--> e17	6.086	.075
e29 <--> e8	7.042	-.066
e29 <--> e2	15.263	-.082
e14 <--> e21	19.864	-.088

	M.I.	Par Change
e14 <--> e2	8.470	-.067
e14 <--> e29	33.814	.113
e11 <--> FA	9.166	.048
e28 <--> SRP	7.012	-.031
e28 <--> EAC	12.194	.060
e28 <--> e8	7.573	.067
e28 <--> e22	14.664	.077
e25 <--> EAC	8.276	-.041
e25 <--> e31	8.175	.032
e25 <--> e14	10.256	.051
e25 <--> e28	6.280	-.035
e7 <--> e31	10.016	-.045
e4 <--> e8	15.270	.124
e4 <--> e31	10.944	-.060
e4 <--> e14	6.922	-.066
e4 <--> e28	20.032	.100
e4 <--> e27	11.706	-.057
e4 <--> e7	18.137	.099
e24 <--> CC	6.063	.016
e24 <--> e17	6.120	-.046
e24 <--> e5	6.730	-.042
e1 <--> e20	8.530	-.065

Moreira and Canavarro (2017) – 29-item model (Model I.7)



Standardized Regression Weights: (Infants - Default model)

	Estimate
IMP1 <--- FA	.654
IMP9 <--- FA	.685
IMP13 <--- FA	.715
IMP19 <--- FA	.754
IMP24 <--- FA	.721
IMP4 <--- CC	.440
IMP7 <--- CC	.643
IMP25 <--- CC	.654
IMP27 <--- CC	.726
IMP28 <--- CC	.707
IMP5 <--- SRP	.643
IMP11 <--- SRP	.687
IMP14 <--- SRP	.660
IMP29 <--- SRP	.737
IMP15 <--- NJ	.751

	Estimate
IMP17 <--- NJ	.752
IMP18 <--- NJ	.636
IMP20 <--- NJ	.683
IMP23 <--- NJ	.754
IMP26 <--- NJ	.622
IMP22 <--- EAC	.693
IMP30 <--- EAC	.771
IMP31 <--- CC	.751
IMP10 <--- NJ	.281
IMP12 <--- EAC	.625
IMP2 <--- SRP	.612
IMP8 <--- SRP	.463
IMP16 <--- SRP	.693
IMP21 <--- SRP	.705

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	98	666.453	366	.000	1.821
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.836	.818	.919	.909	.918
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.051	.045	.057	.415
Independence model	.168	.163	.173	.000

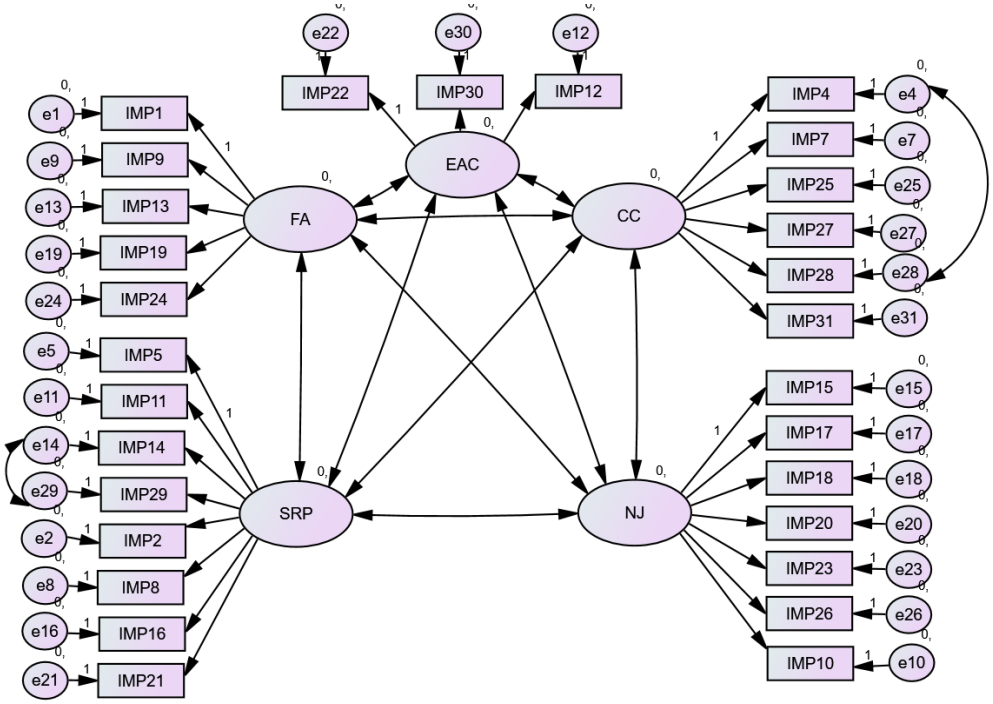
Modification Indices (Infants - Default model)

Covariances: (Infants - Default model)

	M.I.	Par Change
e2 <--> e21	11.413	.070
e18 <--> e21	10.272	.064
e14 <--> e21	14.801	-.072
e28 <--> EAC	12.138	.059
e28 <--> e22	14.654	.077
e7 <--> e31	10.452	-.046

	M.I.	Par Change
e4 <--> e8	14.199	.118
e4 <--> e31	11.571	-.062
e4 <--> e28	19.121	.097
e4 <--> e27	12.198	-.058
e4 <--> e7	17.328	.096

Moreira and Canavarro (2017) – 29-item model (Model I.8)



Standardized Regression Weights: (Infants - Default model)

	Estimate
IMP1 <--- FA	.655
IMP9 <--- FA	.685
IMP13 <--- FA	.715
IMP19 <--- FA	.754
IMP24 <--- FA	.721
IMP4 <--- CC	.393
IMP7 <--- CC	.627
IMP25 <--- CC	.664
IMP27 <--- CC	.736
IMP28 <--- CC	.685
IMP5 <--- SRP	.643
IMP11 <--- SRP	.688

	Estimate
IMP14 <--- SRP	.662
IMP29 <--- SRP	.739
IMP15 <--- NJ	.752
IMP17 <--- NJ	.752
IMP18 <--- NJ	.636
IMP20 <--- NJ	.683
IMP23 <--- NJ	.754
IMP26 <--- NJ	.622
IMP22 <--- EAC	.691
IMP30 <--- EAC	.774
IMP31 <--- CC	.768
IMP10 <--- NJ	.281

			Estimate
IMP12	<---	EAC	.624
IMP2	<---	SRP	.611
IMP8	<---	SRP	.460

			Estimate
IMP16	<---	SRP	.694
IMP21	<---	SRP	.703

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	99	645.714	365	.000	1.769
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.841	.823	.924	.915	.923
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

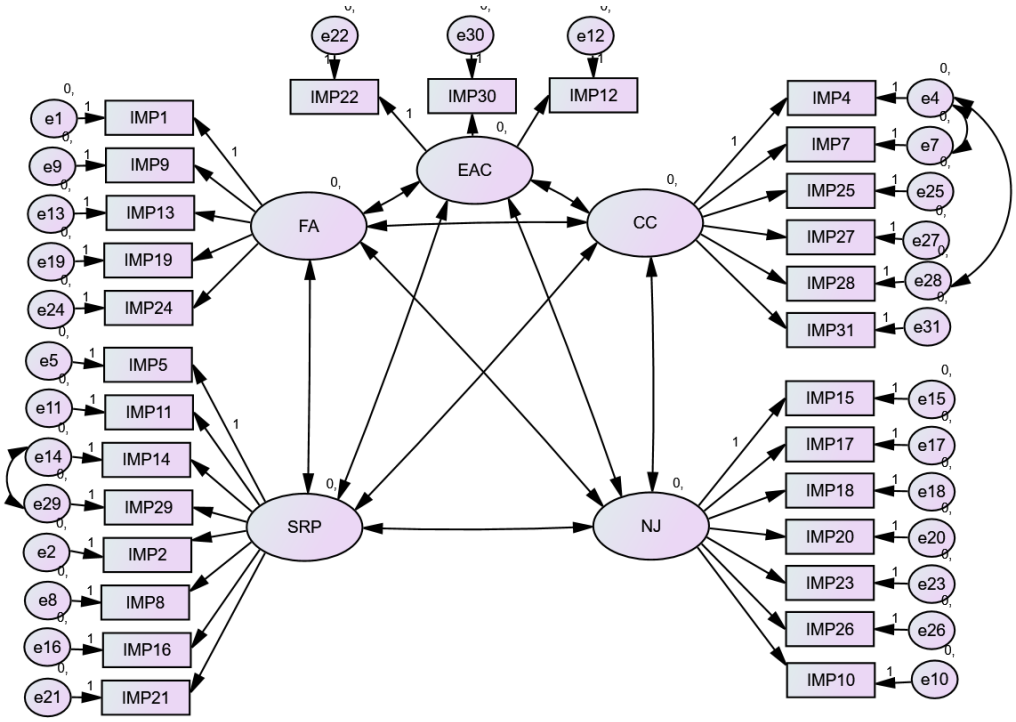
Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.043	.055	.587
Independence model	.168	.163	.173	.000

Modification Indices (Infants - Default model)

Covariances: (Infants - Default model)

			M.I.	Par Change
e2	<-->	e21	11.675	.071
e18	<-->	e21	10.413	.065
e14	<-->	e21	14.965	-.072
e28	<-->	EAC	11.569	.056
e28	<-->	e22	12.908	.071
e7	<-->	e31	10.513	-.046
e4	<-->	e8	10.977	.101
e4	<-->	e7	18.138	.097

Moreira and Canavarro (2017) – 29-item model (Model I.9)



Standardized Regression Weights: (Infants - Default model)

	Estimate
IMP1 <--- FA	.655
IMP9 <--- FA	.684
IMP13 <--- FA	.715
IMP19 <--- FA	.754
IMP24 <--- FA	.721
IMP4 <--- CC	.367
IMP7 <--- CC	.620
IMP25 <--- CC	.665
IMP27 <--- CC	.742
IMP28 <--- CC	.684
IMP5 <--- SRP	.643
IMP11 <--- SRP	.688
IMP14 <--- SRP	.664
IMP29 <--- SRP	.740
IMP15 <--- NJ	.752

	Estimate
IMP17 <--- NJ	.752
IMP18 <--- NJ	.636
IMP20 <--- NJ	.683
IMP23 <--- NJ	.754
IMP26 <--- NJ	.622
IMP22 <--- EAC	.691
IMP30 <--- EAC	.775
IMP31 <--- CC	.772
IMP10 <--- NJ	.281
IMP12 <--- EAC	.623
IMP2 <--- SRP	.611
IMP8 <--- SRP	.459
IMP16 <--- SRP	.694
IMP21 <--- SRP	.702

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	100	626.750	364	.000	1.722
Saturated model	464	.000	0		
Independence model	58	4058.027	406	.000	9.995

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.846	.828	.929	.920	.928
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.041	.054	.733
Independence model	.168	.163	.173	.000

IMP and Parent and Child age:

Correlations

Infant or child			IMP Total score (without items 3 or 6)
infant aged 0-2	Parent age	Pearson Correlation	.096
		Sig. (2-tailed)	.087
		N	316
	Child age	Pearson Correlation	.163**
		Sig. (2-tailed)	.003
		N	320
child aged 3-18	Parent age	Pearson Correlation	.133**
		Sig. (2-tailed)	.008
		N	396
	Child age	Pearson Correlation	.058
		Sig. (2-tailed)	.251
		N	396

**. Correlation is significant at the 0.01 level (2-tailed).

IMP and Parent previous mental health diagnosis:

Report

IMP Total score (without items 3 or 6)

Infant or child	Mental health	Mean	N	Std. Deviation
infant aged 0-2	Yes	104.850	147	12.430
	No	107.670	173	12.444
	Total	106.375	320	12.498
child aged 3-18	Yes	98.966	148	12.745
	No	103.891	248	12.750
	Total	102.050	396	12.953

Independent Samples Test (Infants)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.700	.403	-2.021	318	.044	-2.820	1.395	-5.565	-.075

Independent Samples Test (Children)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.003	.960	-3.719	394	.000	-4.924	1.324	-7.528	-2.321

IMP and History of formal mindfulness practice (parents of children):

Group Statistics

	Mindfulness_categorised	N	Mean	Std. Deviation	Std. Error Mean
IMP Total score (without items 3 or 6)	No	252	101.8135	13.08145	.82405
	Yes	144	102.4653	12.76244	1.06354

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.006	.940	-.481	394	.631	-.651	1.354	-3.314	2.011

IMP and Length of mindfulness practice (parents of children):

Group Statistics

	Length_practice_categorised	N	Mean	Std. Deviation	Std. Error Mean
IMP Total score (without items 3 or 6)	Less than 1 yr	64	100.8594	12.66023	1.58253
	1yr or more	75	103.9600	12.86147	1.48511

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.128	.721	-1.427	137	.156	-3.100	2.172	-7.397	1.196

IMP and Frequency of practice (parents of children):

Group Statistics

	Freq_practice_categorised	N	Mean	Std. Deviation	Std. Error Mean
IMP Total score (without items 3 or 6)	Practice monthly or more often	89	104.9213	13.02988	1.38116
	Practice less than monthly or not at all	50	98.2800	11.35519	1.60587

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	2.250	.136	3.017	137	.003	6.641	2.201	2.287	10.994

IMP and History of formal mindfulness practice (parents of infants):

Group Statistics

	Mindfulness_categorised	N	Mean	Std. Deviation	Std. Error Mean
IMP Total score (without items 3 or 6)	No	178	104.8539	12.59858	.94430
	Yes	142	108.2817	12.14824	1.01946

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.013	.910	-2.457	318	.015	-3.427	1.395	-6.172	-.682

IMP and Length of mindfulness practice (parents of infants):

Group Statistics

	Length_practice_categorised	N	Mean	Std. Deviation	Std. Error Mean
IMP Total score (without items 3 or 6)	Less than 1 yr	68	105.7059	11.35986	1.37759
	1yr or more	71	111.0423	12.36636	1.46762

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.198	.657	-2.646	137	.009	-5.336	2.016	-9.324	-1.348

IMP and Frequency of mindfulness practice (parents of infants):

Group Statistics

	Freq_practice_categorised	N	Mean	Std. Deviation	Std. Error Mean
IMP Total score (without items 3 or 6)	Practice monthly or more often	80	109.3000	12.22924	1.36727
	Practice less than monthly or not at all	59	107.2542	12.02238	1.56518

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IMP Total score (without items 3 or 6)	Equal variances assumed	.114	.736	.982	137	.328	2.045	2.083	-2.074	6.166

APPENDIX C1

Demographics Questionnaire

1. Do you consider yourself to be the primary caregiver for the children in your family?
    a. Yes
    b. No
    c. I share the caregiving role equally with another family member

2. What is your age (in years): [*select from pull down menu*]

3. In which country is your **primary** residence? [*select from pull-down menu*]

4. Please choose the cultural background that you **most closely** identify with:
    a. Australian
    b. Australian Aboriginal, Torres Strait Islander or South Sea Islander
    c. New Zealander
    d. British or Irish
    e. Western European
    f. Northern European
    g. Southern European
    h. Eastern European
    i. South-East Asian
    j. North-East Asian
    k. Southern or Central Asian
    l. Middle Eastern
    m. North African
    n. Sub-Saharan African
    o. North American
    p. South or Central American
    q. Other (*please specify*)

5. What is the highest level of education you have **completed**?
    a. Post-graduate degree (Master's degree or doctoral degree)
    b. Bachelor's degree (including an Honours-level degree)
    c. Associate's degree
    d. Vocational training
    e. High school or secondary school (Year 12 or equivalent) or less
    f. Other

6. How many children are in your family:
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5 or more

7. Have you ever been diagnosed with a mental health condition?
    a. Yes
    b. No

8. Have you ever engaged in the formal practice of mindfulness (or other form of meditation or contemplative practice)?
    a. No formal practice
    b. Mindfulness
    c. Yoga
    d. Tai chi
    e. Other (*please specify*)

9. [*Display this question only if "Mindfulness" is selected in Q8*] For approximately how long have you engaged in the formal practice of mindfulness?
    a. Less than 3 months
    b. 3 to 6 months
    c. 6 months to 1 year
    d. 1 to 5 years
    e. 5 to 10 years
    f. More than 10 years

10. [*Display this question only if "Mindfulness" is selected in Q8*] How frequently are you currently engaging in formal practice of mindfulness?
    a. Once or more a day
    b. 3 or more times a week
    c. 1 to 2 times a week
    d. Once a fortnight
    e. Once a month
    f. Less than once a month
    g. Not currently practicing

For the following questions about parenting practices, please choose one child aged 0-20 years in your family, and answer the questions about your parenting of that child:

11. What is your relationship to the child about whom you will answer the parenting questions?
    a. Biological mother
    b. Biological father
    c. Adoptive mother
    d. Adoptive father
    e. Stepmother
    f. Stepfather
    g. Foster mother
    h. Foster father
    i. Grandmother
    j. Grandfather
    k. Other (*please specify*)

12. What is the gender of the child about whom you will answer the parenting questions?
    a. Male
    b. Female
    c. Other (*please specify*)

13. What is the age of the child about whom you will answer the parenting questions? [*select from pull-down menu*]

Interpersonal Mindfulness in Parenting Scale

The following statements describe different ways that parents interact with their children on a daily basis. Please select whether you think the statement is "Never True", "Rarely True", "Sometimes True", "Often True" or "Always True" for you.

Remember there are no right or wrong answers. Please answer according to what ***really*** reflects your experience rather than what you think your experience *should* be. Please treat each statement separately from every other statement.

	Never True	Rarely True	Sometimes True	Often True	Always True
1. I find myself listening to my child with one ear because I am busy doing or thinking about something else at the same time.	1	2	3	4	5
2. When I'm upset with my child, I notice how I am feeling before I take action.	1	2	3	4	5
3. I notice how changes in my child's mood affect my mood.	1	2	3	4	5
4. I listen carefully to my child's ideas, even when I disagree with them.	1	2	3	4	5
5. I often react too quickly to what my child says or does.	1	2	3	4	5
6. I am aware of how my moods affect the way I treat my child.	1	2	3	4	5
7. Even when it makes me uncomfortable, I allow my child to express his/her feelings.	1	2	3	4	5
8. When I am upset with my child, I calmly tell him/her how I am feeling.	1	2	3	4	5
9. I rush through activities with my child without really being attentive to him/her.	1	2	3	4	5
10. I have difficulty accepting my child's growing independence.	1	2	3	4	5
11. How I am feeling tends to affect my parenting decisions, but I do not realise it until later.	1	2	3	4	5
12. It is hard for me to tell what my child is feeling.	1	2	3	4	5
13. When I am doing things with my child, my mind wanders off and I am easily distracted.	1	2	3	4	5
14. When my child misbehaves, it makes me so upset I say or do things I later regret.	1	2	3	4	5
15. I tend to be hard on myself when I make mistakes as a parent.	1	2	3	4	5

16. When my child does something that upsets me, I try to keep my emotions in balance.	1	2	3	4	5
17. When times are really difficult with my child, I tend to blame myself.	1	2	3	4	5
18. When things I try to do as a parent do not work out, I can accept them and move on.	1	2	3	4	5
19. I am often so busy thinking about other things that I realise I am not really listening to my child.	1	2	3	4	5
20. When I do something as a parent that I regret, I try to give myself a break.	1	2	3	4	5
21. In difficult situations with my child, I pause without immediately reacting.	1	2	3	4	5
22. It is easy for me to tell when my child is worried about something.	1	2	3	4	5
23. I tend to criticize myself for not being the kind of parent I want to be.	1	2	3	4	5
24. I pay close attention to my child when we are spending time together.	1	2	3	4	5
25. I am kind to my child when he/she is upset.	1	2	3	4	5
26. When I am having a hard time with parenting, I feel like other parents must have an easier time of it.	1	2	3	4	5
27. When my child is going through a difficult time, I try to give him/her the nurturing and caring he/she needs.	1	2	3	4	5
28. I try to understand my child's point of view, even when his/her opinions do not makes sense to me.	1	2	3	4	5
29. When something my child does upsets me, I get carried away with my feelings.	1	2	3	4	5
30. I can tell what my child is feeling even if he/she does not say anything.	1	2	3	4	5
31. I try to be understanding and patient with my child when he/she is having a hard time.	1	2	3	4	5

Duncan, L. G. (2007). Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting scale [doctoral dissertation]. Pennsylvania State University.

Duncan, L. G., Coatsworth, J., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review, 12*, 255-270. doi:10.1007/s10567-009-0046-3

Strengths and Difficulties Questionnaire (2-4 years)

In relation to the child you are answering about, for each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child's behaviour over the last six months.

	Not true	Somewhat true	Certainly true
Considerate of other people's feelings	0	1	2
Restless, overactive, cannot stay still for long	0	1	2
Often complains of headaches, stomach-aches or sickness	0	1	2
Shares readily with other children, for example toys, treats, pencils	0	1	2
Often loses temper	0	1	2
Rather solitary, prefers to play alone	0	1	2
Generally well behaved, usually does what adults request	2	1	0
Many worries or often seems worried	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Constantly fidgeting or squirming	0	1	2
Has at least one good friend	2	1	0
Often fights with other children or bullies them	0	1	2
Often unhappy, depressed or tearful	0	1	2
Generally liked by other children	2	1	0
Easily distracted, concentration wanders	0	1	2
Nervous or clingy in new situations, easily loses confidence	0	1	2
Kind to younger children	0	1	2
Often argumentative with adults	0	1	2
Picked on or bullied by other children	0	1	2
Often volunteers to help others (parents, teachers, other children)	0	1	2
Can stop and think things out before acting	2	1	0
Can be spiteful to others	0	1	2
Gets along better with adults than with other children	0	1	2
Many fears, easily scared	0	1	2
Good attention span, sees chores or homework through to the end	2	1	0

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.

Strengths and Difficulties Questionnaire (5-10 years)

In relation to the child you are answering about, for each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child's behaviour over the last six months.

	Not true	Somewhat true	Certainly true
Considerate of other people's feelings	0	1	2
Restless, overactive, cannot stay still for long	0	1	2
Often complains of headaches, stomach-aches or sickness	0	1	2
Shares readily with other children, for example toys, treats, pencils	0	1	2
Often loses temper	0	1	2
Rather solitary, prefers to play alone	0	1	2
Generally well behaved, usually does what adults request	2	1	0
Many worries or often seems worried	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Constantly fidgeting or squirming	0	1	2
Has at least one good friend	2	1	0
Often fights with other children or bullies them	0	1	2
Often unhappy, depressed or tearful	0	1	2
Generally liked by other children	2	1	0
Easily distracted, concentration wanders	0	1	2
Nervous or clingy in new situations, easily loses confidence	0	1	2
Kind to younger children	0	1	2
Often lies or cheats	0	1	2
Picked on or bullied by other children	0	1	2
Often volunteers to help others (parents, teachers, other children)	0	1	2
Thinks things out before acting	2	1	0
Steals from home, school or elsewhere	0	1	2
Gets along better with adults than with other children	0	1	2
Many fears, easily scared	0	1	2
Good attention span, sees work through to the end	2	1	0

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.

Strengths and Difficulties Questionnaire (11-17 years)

In relation to the child you are answering about, for each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child's behaviour over the last six months.

	Not true	Somewhat true	Certainly true
Considerate of other people's feelings	0	1	2
Restless, overactive, cannot stay still for long	0	1	2
Often complains of headaches, stomach-aches or sickness	0	1	2
Shares readily with other youth, for example CDs, games, food	0	1	2
Often loses temper	0	1	2
Would rather be alone than with other young people	0	1	2
Generally well behaved, usually does what adults request	2	1	0
Many worries or often seems worried	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Constantly fidgeting or squirming	0	1	2
Has at least one good friend	2	1	0
Often fights with other young people or bullies them	0	1	2
Often unhappy, depressed or tearful	0	1	2
Generally liked by other young people	2	1	0
Easily distracted, concentration wanders	0	1	2
Nervous in new situations, easily loses confidence	0	1	2
Kind to younger children	0	1	2
Often lies or cheats	0	1	2
Picked on or bullied by other young people	0	1	2
Often volunteers to help others (parents, teachers, other children)	0	1	2
Thinks things out before acting	2	1	0
Steals from home, school or elsewhere	0	1	2
Gets along better with adults than with other young people	0	1	2
Many fears, easily scared	0	1	2
Good attention span, sees chores or homework through to the end	2	1	0

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.

DASS21

Name: *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behaviour Research and Therapy, 33(3), 335–343. doi: 10.1016/0005-7967(94)00075-U

Parental Acceptance and Action Questionnaire

Thinking about the child you are answering about, please rate the degree to which the following statements are true about you.

1 = Never true	2 = Almost never true	3 = Occasionally true	4 = Sometimes true	5 = Often true	6 = Almost always true	7 = Always true

Inaction

1. I am able to take action about my child's fears, worries, and feelings even if I am uncertain what the right thing is to do.
2. When I feel depressed or anxious, I am unable to help my child manage their fears, worries, or feelings.
3. I try to suppress thoughts and feelings about my child that I don't like, by just not thinking about them.
4. In order for my child to do something important, I have to have all my doubts about it worked out.
5. I'm not afraid of my child's feelings.
6. Despite my doubts, I feel as though I can set a plan for managing my child's feelings.
7. If I get frustrated with my child, then I can still help him or her.
8. I often catch myself daydreaming about things I've done with my child and what I would do differently next time.
9. When I compare myself to other parents, it seems that most of them are handling their lives better than I do.

Unwillingness

10. It's okay for my child to feel depressed or anxious.
11. I rarely worry about getting my child's anxieties, worries, and feelings under control.
12. I try hard to avoid having my child feel depressed or anxious.
13. It is bad if my child feels anxious.
14. If I could magically remove all the painful experiences my child has had in his or her life, I would do so.
15. Worries can get in the way of my child's success.

Cognitive Emotion Regulation Questionnaire
CERQ

Everyone gets confronted with negative or unpleasant experiences and everyone responds to them in his or her own way. By the following questions, you are asked to indicate **what you generally think**, **when you experience negative or unpleasant events**. Please read the sentences below and indicate how often you have the following thoughts by selecting the most suitable answer.

Scale name	Items
Self-blame	-I feel that I am the one to blame for it -I feel that I am the one who is responsible for what has happened -I think about the mistakes I have made in this matter -I think that basically the cause must lie within myself
Acceptance	-I think that I have to accept that this has happened -I think that I have to accept the situation -I think that I cannot change anything about it -I think that I must learn to live with it
Focus on thought/ rumination	-I often think about how I feel about what I have experienced -I am preoccupied with what I think and feel about what I have experienced -I want to understand why I feel the way I do about what I have experienced -I dwell upon the feelings the situation has evoked in me
Positive refocusing	-I think of nicer things than what I have experienced -I think of pleasant things that have nothing to do with it -I think of something nice instead of what has happened -I think about pleasant experiences
Refocus on planning	-I think of what I can do best -I think about how I can best cope with the situation -I think about how to change the situation -I think about a plan of what I can do best
Positive reappraisal	-I think I can learn something from the situation -I think that I can become a stronger person as a result of what has happened -I think that the situation also has its positive sides -I look for the positive sides to the matter
Putting into perspective	-I think that it all could have been much worse -I think that other people go through much worse experiences -I think that it hasn't been too bad compared to other things - I tell myself that there are worse things in life

Cognitive Emotion Regulation Questionnaire
CERQ

Scale name	Items
Catastrophizing	-I often think that what I have experienced is much worse than what others have experienced -I keep thinking about how terrible it is what I have experienced - I often think that what I have experienced is the worst that can happen to a person -I continually think how horrible the situation has been
Blaming others	-I feel that others are to blame for it -I feel that others are responsible for what has happened -I think about the mistakes others have made in this matter -I feel that basically the cause lies with others

Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences, Vol 30(8)*, 1311-1327. doi: 10.1016/S0191-8869(00)00113-6

Parent Attitudes, Beliefs, and Understanding about Anxiety (PABUA)

These questions relate to your attitudes and beliefs about your child when he/she is feeling **nervous** or **anxious**. Please indicate the degree to which you agree with each of the following items using the scale below. There are no right or wrong answers. Simply circle your response to each item.

1	2	3	4	5
Strongly disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Strongly agree

1.	My child's anxiety will decrease if he/she avoids what makes him/her anxious.	1	2	3	4	5
2.	My child should be excused from activities that make him/her nervous.	1	2	3	4	5
3.	A good parent will not push his/her child to do things that makes him/her nervous.	1	2	3	4	5
4.	A way to help my child feel less anxious is to encourage him/her to face his/her fears.	1	2	3	4	5
5.	Anxious children are sensitive and need to be protected.	1	2	3	4	5
6.	If my child had different parents perhaps he/she would not be so anxious.	1	2	3	4	5
7.	As a parent I am very limited in how much I can help my child with his/her anxiety.	1	2	3	4	5
8.	It is hard for me to be with my child when he/she is nervous.	1	2	3	4	5
9.	I feel uncertain about how to help my child when he/she is anxious.	1	2	3	4	5
10.	My child is my best friend.	1	2	3	4	5
11.	It is important that other people in my child's life (e.g., teachers) do not push him/her to do things that make him/her nervous.	1	2	3	4	5
12.	A good parent allows their child to have freedom and experience things on their own.	1	2	3	4	5
13.	I feel uncomfortable when my child feels anxious.	1	2	3	4	5
14.	It is important that I keep my child safe from his /her worries.	1	2	3	4	5
15.	My child should not be worried.	1	2	3	4	5
16.	Children can learn a great deal from their mistakes.	1	2	3	4	5
17.	It is important that I protect my child from feeling anxious.	1	2	3	4	5
18.	My child will be traumatized if I push him/her to do something that makes him/her nervous.	1	2	3	4	5
19.	If my child is forced to face his/her anxiety it will make it worse.	1	2	3	4	5
20.	I try not to think about my child's anxiety.	1	2	3	4	5
21.	It is important for children to see adults cope with anxiety.	1	2	3	4	5

Podell, J.L., Benjamin, C.L., Beidas, R.S., Crawley, S., & Kendall, P.C. (2009). Parent Attitudes and Beliefs about Anxiety (PABA). Unpublished measure.

Wolk, C.B., Caporino, N.E., McQuarrie, S., Settipani, C.A., Podell, J.L., Crawley, S., Beidas, R.S., & Kendall, P.C. (2016). Parental Attitudes, Beliefs, and Understanding of Anxiety (PABUA): Development and psychometric properties of a measure. Journal of Anxiety Disorders, 39, 71-78.

Parental Accommodation Scale

Instructions: Please rate how often you respond to your child's anxiety or distress in the following ways. For each item, circle one number.

	Never/ almost never	Sometimes	Often	Always/ almost always
1. I help my child avoid things or perform behaviours so that he or she feels better immediately.	0	1	2	3
2. I allow my child to avoid things or situations that upset him or her, but don't upset most kids his or her age.	0	1	2	3
3. I put up with unwanted conditions in my home environment so that my child is less upset.	0	1	2	3
4. I am careful not to say or do things that might upset or worry my child.	0	1	2	3
5. I do things for my child when he or she is scared or upset, that he or she should be able to do on his or her own.	0	1	2	3

Meyer, J. M., Clapp, J. D., Whiteside, S. P., Dammann, J., Kriegshauser, K. D., Hale, L. R., Jacobi, D. M., Riemann, B. C., & Deacon, B. J. (2018). Predictive relationship between parental beliefs and accommodation of pediatric anxiety. *Behavior Therapy*, 49, 580-593.

APPENDIX C2

SPSS output for Chapter 4

Descriptive statistics:

Descriptive Statistics

Infant or child		N	Range	Minimum	Maximum	Mean	Std. Deviation
.00	Parent age	74	27	26	53	33.88	4.584
	Child age	75	2	0	2	1.16	.754
	Valid N (listwise)	74					
1.00	Parent age	170	29	27	56	38.46	5.696
	Child age	170	15	3	18	7.69	3.769
	Valid N (listwise)	170					

Infant or child * Child gender - Selected Choice Crosstabulation

Count

		Child gender - Selected Choice			
		Male	Female	Other	Total
Infant or child	Infant 0-2	34	41	0	75
	Child 3-18	76	92	2	170
Total		110	133	2	245

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.890[a]	2	.641
Likelihood Ratio	1.469	2	.480
Linear-by-Linear Association	.064	1	.800
N of Valid Cases	245		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .61.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.060	.641
	Cramer's V	.060	.641
N of Valid Cases		245	

Infant or child * Relation_to_child_simplified2 Crosstabulation

Count

		Relation_to_child_simplified2		
		Biological mother	Other female caregiver	Total
Infant or child	Infant 0-2	72	3	75
	Child 3-18	165	5	170
Total		237	8	245

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.185[a]	1	.667		
Continuity Correction[b]	.002	1	.968		
Likelihood Ratio	.178	1	.673		
Fisher's Exact Test				.703	.465
Linear-by-Linear Association	.184	1	.668		
N of Valid Cases	245				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.45.
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.027	.667
	Cramer's V	.027	.667
N of Valid Cases		245	

Infant or child * Primary Carer Crosstabulation

Count

		Primary Carer			
		Yes	No	Shared	Total
Infant or child	Infant 0-2	59	0	16	75
	Child 3-18	127	2	41	170
Total		186	2	57	245

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.163[a]	2	.559
Likelihood Ratio	1.745	2	.418
Linear-by-Linear Association	.330	1	.566
N of Valid Cases	245		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .61.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.069	.559
	Cramer's V	.069	.559
N of Valid Cases		245	

Infant or child * Number_children_simplified Crosstabulation

Count

		Number_children_simplified				
		1	2	3	4 or more	Total
Infant or child	Infant 0-2	60	12	2	1	75
	Child 3-18	33	86	42	9	170
Total		93	98	44	10	245

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	81.967[a]	3	.000
Likelihood Ratio	85.208	3	.000
Linear-by-Linear Association	59.984	1	.000
N of Valid Cases	245		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 3.06.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.578	.000
	Cramer's V	.578	.000
N of Valid Cases		245	

Infant or child * 3 categories of parent education Crosstabulation

Count

		3 categories of parent education			
		Post-graduate or Bachelor degree	Associate degree or vocational training	Secondary school or other	Total
Infant or child	Infant 0-2	65	3	7	75
	Child 3-18	126	22	21	169
Total		191	25	28	244

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.529[a]	2	.063
Likelihood Ratio	6.297	2	.043
Linear-by-Linear Association	2.650	1	.104
N of Valid Cases	244		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.68.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.151	.063
	Cramer's V	.151	.063
N of Valid Cases		244	

Infant or child * Parent previous mental health dx Crosstabulation

Count

		Parent previous mental health dx		
		Yes	No	Total
Infant or child	Infant 0-2	41	34	75
	Child 3-18	73	97	170
Total		114	131	245

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.876[a]	1	.090		
Continuity Correction[b]	2.424	1	.120		
Likelihood Ratio	2.873	1	.090		
Fisher's Exact Test				.097	.060
Linear-by-Linear Association	2.864	1	.091		
N of Valid Cases	245				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 34.90.
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.108	.090
	Cramer's V	.108	.090
N of Valid Cases		245	

Infant or child * Parent history of mindfulness practice Crosstabulation

Count

		Parent history of mindfulness practice		
		Some mindfulness practice hx	No mindfulness practice hx	Total
Infant or child	Infant 0-2	42	33	75
	Child 3-18	75	95	170
Total		117	128	245

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.945[a]	1	.086		
Continuity Correction[b]	2.488	1	.115		
Likelihood Ratio	2.947	1	.086		
Fisher's Exact Test				.097	.057
Linear-by-Linear Association	2.933	1	.087		
N of Valid Cases	245				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 35.82.
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.110	.086
	Cramer's V	.110	.086
N of Valid Cases		245	

Infant or child * Length_practice_categorised Crosstabulation

Count

		Length_practice_categorised		
		< 1 year	>1 year	Total
Infant or child	Infant 0-2	15	27	42
	Child 3-18	30	42	72
Total		45	69	114

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.393[a]	1	.531		
Continuity Correction[b]	.184	1	.668		
Likelihood Ratio	.396	1	.529		
Fisher's Exact Test				.558	.335
Linear-by-Linear Association	.390	1	.532		
N of Valid Cases	114				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.58.
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.059	.531
	Cramer's V	.059	.531
N of Valid Cases		114	

Infant or child * Frequency_practice_categorised Crosstabulation

Count

		Frequency_practice_categorised		
		< monthly	> monthly	Total
Infant or child	Infant 0-2	38	4	42
	Child 3-18	63	9	72
Total		101	13	114

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.233[a]	1	.630		
Continuity Correction[b]	.031	1	.860		
Likelihood Ratio	.238	1	.626		
Fisher's Exact Test				.765	.438
Linear-by-Linear Association	.231	1	.631		
N of Valid Cases	114				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.79.
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.045	.630
	Cramer's V	.045	.630
N of Valid Cases		114	

Internal consistency of questionnaires

Scale: IMP LFA

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.853	.856	5
Child 3-18	.888	.889	5

Scale: IMP CC

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.789	.798	6
Child 3-18	.849	.851	6

Scale: IMP NJAPF

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.846	.851	6
Child 3-18	.824	.825	6

Scale: IMP EAC

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.632	.634	3
Child 3-18	.857	.862	3

Scale: IMP ENRP

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.757	.763	5
Child 3-18	.807	.809	5

Scale: IMP EAS

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.726	.731	4
Child 3-18	.800	.799	4

Scale: SDQ_2to4_Internalising

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.406	.446	10
Child 3-18	.763	.760	10

Scale: SDQ_5to10_Internalising

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Child 3-18	.706	.704	10

Scale: SDQ_11to17_Internalising

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Child 3-18	.873	.871	10

Scale: DASS_Total

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.923	.924	21
Child 3-18	.930	.930	21

Scale: CERQ_Maladaptive

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.880	.886	16
Child 3-18	.862	.858	16

Scale: CERQ_Adaptive

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.922	.920	20
Child 3-18	.907	.905	20

Scale: PAB_Overprotection

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.882	.893	11
Child 3-18	.855	.862	11

Scale: PAB_Approach

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.283	.280	4
Child 3-18	.412	.424	4

Scale: PAB_Distress

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.568	.575	6
Child 3-18	.709	.707	6

Scale: PAAQ_Total

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.813	.822	15
Child 3-18	.833	.840	15

Scale: PAS_Behaviour

Reliability Statistics

Infant or child	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Infant 0-2	.777	.792	5
Child 3-18	.768	.768	5

Preliminary Analyses

IMP and Parent and Child age:

Correlations

		Parent age	Child age	IMP_29_Total
Parent age	Pearson Correlation	1	.563**	.040
	Sig. (2-tailed)		.000	.535
	N	244	244	244
Child age	Pearson Correlation	.563**	1	-.109
	Sig. (2-tailed)	.000		.090
	N	244	245	245
IMP_29_Total	Pearson Correlation	.040	-.109	1
	Sig. (2-tailed)	.535	.090	
	N	244	245	245

**. Correlation is significant at the 0.01 level (2-tailed).

IMP and child gender:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Male	110	103.0364	14.38203	1.37127	100.3185	105.7542	70.00	134.00
Female	133	104.0827	13.34339	1.15702	101.7940	106.3714	63.00	136.00
Other	2	110.5000	16.26346	11.50000	-35.6214	256.6214	99.00	122.00
Total	245	103.6653	13.80077	.88170	101.9286	105.4020	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	160.110	2	80.055	.418	.659
Within Groups	46312.445	242	191.374		
Total	46472.555	244			

IMP and Parent relationship to child:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Biological mother	237	103.3376	13.79342	.89598	101.5724	105.1027	63.00	136.00
Other female caregiver	8	113.3750	10.63602	3.76040	104.4831	122.2669	98.00	127.00
Total	245	103.6653	13.80077	.88170	101.9286	105.4020	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	779.684	1	779.684	4.146	.043
Within Groups	45692.871	243	188.037		
Total	46472.555	244			

IMP and Caregiver role:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Yes	186	103.3226	13.46199	.98708	101.3752	105.2700	63.00	136.00
No	2	92.0000	29.69848	21.00000	-174.8303	358.8303	71.00	113.00
Shared	57	105.1930	14.41532	1.90936	101.3681	109.0179	67.00	128.00
Total	245	103.6653	13.80077	.88170	101.9286	105.4020	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	427.033	2	213.516	1.122	.327
Within Groups	46045.522	242	190.271		
Total	46472.555	244			

IMP and Number of children in family:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
1 child	93	108.0430	11.35965	1.17794	105.7035	110.3825	79.00	136.00
2 children	98	102.5102	14.06850	1.42113	99.6896	105.3308	70.00	134.00
3 or more children	54	98.2222	14.97755	2.03819	94.1341	102.3103	63.00	126.00
Total	245	103.6653	13.80077	.88170	101.9286	105.4020	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3512.904	2	1756.452	9.894	.000
Within Groups	42959.651	242	177.519		
Total	46472.555	244			

IMP and Parent highest level of education:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Post-graduate or Bachelor degree	191	104.1152	13.55602	.98088	102.1804	106.0500	67.00	136.00
Associate degree or vocational training	25	101.1200	15.18036	3.03607	94.8539	107.3861	63.00	127.00
Secondary school or other	28	104.0357	13.27064	2.50791	98.8899	109.1815	79.00	131.00
Total	244	103.7992	13.66880	.87506	102.0755	105.5228	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	200.090	2	100.045	.533	.587
Within Groups	45201.070	241	187.556		
Total	45401.160	243			

IMP and Parent previous mental health diagnosis:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Yes	114	102.5088	13.71211	1.28426	99.9644	105.0531	70.00	136.00
No	131	104.6718	13.85110	1.21018	102.2776	107.0659	63.00	134.00
Total	245	103.6653	13.80077	.88170	101.9286	105.4020	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	285.178	1	285.178	1.500	.222
Within Groups	46187.377	243	190.072		
Total	46472.555	244			

IMP and Parent history of formal mindfulness practice:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Some mindfulness practice hx	117	105.6838	13.36597	1.23568	103.2363	108.1312	71.00	136.00
No mindfulness practice hx	128	101.8203	13.98449	1.23607	99.3744	104.2663	63.00	134.00
Total	245	103.6653	13.80077	.88170	101.9286	105.4020	63.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	912.389	1	912.389	4.866	.028
Within Groups	45560.166	243	187.490		
Total	46472.555	244			

IMP and Length of mindfulness practice:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
< 1 year	63	101.7302	13.47543	1.69775	98.3364	105.1239	70.00	127.00
>1 year	97	107.7216	12.86852	1.30660	105.1281	110.3152	76.00	136.00
Total	160	105.3625	13.39459	1.05894	103.2711	107.4539	70.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1371.078	1	1371.078	7.977	.005
Within Groups	27155.897	158	171.873		
Total	28526.975	159			

IMP and Frequency of mindfulness practice:

Descriptives

IMP_29_Total

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
< monthly	141	105.1844	13.46244	1.13374	102.9429	107.4259	70.00	136.00
> monthly	19	106.6842	13.15739	3.01851	100.3426	113.0259	76.00	128.00
Total	160	105.3625	13.39459	1.05894	103.2711	107.4539	70.00	136.00

ANOVA

IMP_29_Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	37.664	1	37.664	.209	.648
Within Groups	28489.311	158	180.312		
Total	28526.975	159			

Correlation Analyses

Correlations

		IMP_Dutch_LFA	IMP_Dutch_CC	IMP_Dutch_EAC	IMP_Dutch_NJAPF	IMP_Dutch_ENRP	IMP_Dutch_EAS	SDQ Internalizing all ages	DASS_Total	PAAQ_Total	CERQ_Adaptive	CERQ_Maladaptive	PAB_Overprotection	PAS_Behaviour
IMP_Dutch_LFA	Pearson Correlation	1	.496**	.345**	.398**	.594**	.480**	-.206**	-.256**	-.357**	.095	-.238**	-.072	-.223**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.008	.000	.000	.141	.000	.286	.001
	N	245	245	245	245	245	245	163	236	212	242	244	222	202
IMP_Dutch_CC	Pearson Correlation	.496**	1	.468**	.388**	.521**	.629**	-.174*	-.173**	-.491**	.324**	-.129*	-.037	-.074
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.026	.008	.000	.000	.044	.582	.295
	N	245	245	245	245	245	245	163	236	212	242	244	222	202
IMP_Dutch_EAC	Pearson Correlation	.345**	.468**	1	.234**	.359**	.418**	-.294**	-.104	-.275**	.213**	.039	-.017	-.144*
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.110	.000	.001	.542	.802	.041
	N	245	245	245	245	245	245	163	236	212	242	244	222	202
IMP_Dutch_NJAPF	Pearson Correlation	.398**	.388**	.234**	1	.637**	.402**	-.400**	-.525**	-.678**	.236**	-.550**	-.267**	-.363**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	245	245	245	245	245	245	163	236	212	242	244	222	202
IMP_Dutch_ENRP	Pearson Correlation	.594**	.521**	.359**	.637**	1	.658**	-.323**	-.380**	-.582**	.161*	-.385**	-.106	-.232**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.012	.000	.116	.001
	N	245	245	245	245	245	245	163	236	212	242	244	222	202
IMP_Dutch_EAS	Pearson Correlation	.480**	.629**	.418**	.402**	.658**	1	-.278**	-.253**	-.490**	.376**	-.177**	-.082	-.171*
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.006	.224	.015
	N	245	245	245	245	245	245	163	236	212	242	244	222	202
SDQ Internalizing all ages	Pearson Correlation	-.206**	-.174*	-.294**	-.400**	-.323**	-.278**	1	.344**	.525**	-.151	.251**	.275**	.378**
	Sig. (2-tailed)	.008	.026	.000	.000	.000	.000		.000	.000	.056	.001	.000	.000
	N	163	163	163	163	163	163	163	154	163	161	163	163	163
DASS_Total	Pearson Correlation	-.256**	-.173**	-.104	-.525**	-.380**	-.253**	.344**	1	.468**	-.164*	.621**	.216**	.296**
	Sig. (2-tailed)	.000	.008	.110	.000	.000	.000	.000		.000	.012	.000	.001	.000
	N	236	236	236	236	236	236	154	236	203	233	235	213	193
PAAQ_Total	Pearson Correlation	-.357**	-.491**	-.275**	-.678**	-.582**	-.490**	.525**	.468**	1	-.305**	.447**	.467**	.508**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	212	212	212	212	212	212	163	203	212	210	212	211	202
CERQ_Adaptive	Pearson Correlation	.095	.324**	.213**	.236**	.161*	.376**	-.151	-.164*	-.305**	1	-.095	-.216**	-.142*
	Sig. (2-tailed)	.141	.000	.001	.000	.012	.000	.056	.012	.000		.141	.001	.045
	N	242	242	242	242	242	242	161	233	210	242	242	220	200
CERQ_Maladaptive	Pearson Correlation	-.238**	-.129*	.039	-.550**	-.385**	-.177**	.251**	.621**	.447**	-.095	1	.269**	.390**
	Sig. (2-tailed)	.000	.044	.542	.000	.000	.006	.001	.000	.000	.141		.000	.000
	N	244	244	244	244	244	244	163	235	212	242	244	222	202
PAB_Overprotection	Pearson Correlation	-.072	-.037	-.017	-.267**	-.106	-.082	.275**	.216**	.467**	-.216**	.269**	1	.559**
	Sig. (2-tailed)	.286	.582	.802	.000	.116	.224	.000	.001	.000	.001	.000		.000
	N	222	222	222	222	222	222	163	213	211	220	222	222	202
PAS_Behaviour	Pearson Correlation	-.223**	-.074	-.144*	-.363**	-.232**	-.171*	.378**	.296**	.508**	-.142*	.390**	.559**	1
	Sig. (2-tailed)	.001	.295	.041	.000	.001	.015	.000	.000	.000	.045	.000	.000	
	N	202	202	202	202	202	202	163	193	202	200	202	202	202

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations for mothers of children

Correlations

		SDQ Internalizing all ages
Parent age	Pearson Correlation	-.010
	Sig. (2-tailed)	.895
	N	163
Child age	Pearson Correlation	.236**
	Sig. (2-tailed)	.002
	N	163
Child_gender_categorised	Pearson Correlation	.121
	Sig. (2-tailed)	.126
	N	162
Mindfulness_hx_for_corrs	Pearson Correlation	.074
	Sig. (2-tailed)	.345
	N	163
Length_practice_for_corrs	Pearson Correlation	-.140
	Sig. (2-tailed)	.239
	N	72
Freq_practce_for_corrs	Pearson Correlation	-.075
	Sig. (2-tailed)	.532
	N	72

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		PAAQ_Total	CERQ_Adaptive	CERQ_Maladaptive	PAB_Overprotection	PAS_Behaviour
Parent age	Pearson Correlation	-.094	-.078	-.251**	-.136	-.203*
	Sig. (2-tailed)	.254	.314	.001	.090	.015
	N	148	168	170	156	143
Child age	Pearson Correlation	.021	-.055	-.180*	-.103	-.067
	Sig. (2-tailed)	.798	.481	.019	.199	.426
	N	148	168	170	156	143
Child_gender_categorised	Pearson Correlation	.105	-.053	.051	.136	.216**
	Sig. (2-tailed)	.205	.496	.515	.092	.010
	N	147	166	168	155	142
Mindfulness_hx_for_corrs	Pearson Correlation	-.033	.111	.113	-.082	.069
	Sig. (2-tailed)	.693	.150	.141	.307	.411
	N	148	168	170	156	143
Length_practice_for_corrs	Pearson Correlation	-.148	.145	-.139	.081	.006
	Sig. (2-tailed)	.263	.231	.244	.528	.967
	N	59	70	72	63	58
Freq_practce_for_corrs	Pearson Correlation	-.012	.166	.055	-.101	-.005
	Sig. (2-tailed)	.931	.170	.649	.429	.973
	N	59	70	72	63	58

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Correlations for mothers of infants

Correlations

		PAAQ_Total	CERQ_Adaptive	CERQ_Maladaptive	PAB_Overprotection	PAS_Behaviour
Parent age	Pearson Correlation	-.166	-.018	.016	.021	-.132
	Sig. (2-tailed)	.191	.877	.893	.870	.321
	N	64	73	73	66	59
Child age	Pearson Correlation	-.345**	.053	.012	-.062	-.089
	Sig. (2-tailed)	.005	.654	.918	.620	.505
	N	64	74	74	66	59
Child_gender_categorised	Pearson Correlation	-.075	.075	.026	.063	.029
	Sig. (2-tailed)	.555	.524	.826	.614	.829
	N	64	74	74	66	59
Mindfulness_hx_for_corrs	Pearson Correlation	-.129	.076	-.008	-.091	.021
	Sig. (2-tailed)	.308	.518	.944	.465	.874
	N	64	74	74	66	59
Length_practice_for_corrs	Pearson Correlation	-.235	.170	-.143	-.125	-.296
	Sig. (2-tailed)	.161	.088	.374	.454	.095
	N	37	41	41	38	33
Freq_practce_for_corrs	Pearson Correlation	.123	-.076	-.047	-.114	-.022
	Sig. (2-tailed)	.467	.636	.770	.495	.904
	N	37	41	41	38	33

**. Correlation is significant at the 0.01 level (2-tailed).

Regression for Child internalizing problems

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.410[a]	.168	.157	3.42311	.168	15.220	2	151	.000
2	.507[b]	.257	.216	3.30141	.089	2.890	6	145	.011

a. Predictors: (Constant), DASS_Total, Child age
b. Predictors: (Constant), DASS_Total, Child age, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	356.680	2	178.340	15.220	.000[b]
	Residual	1769.374	151	11.718		

	Total	2126.055	153			
2	Regression	545.659	8	68.207	6.258	.000[c]
	Residual	1580.395	145	10.899		
	Total	2126.055	153			

a. Dependent Variable: SDQ Internalizing all ages
b. Predictors: (Constant), DASS_Total, Child age
c. Predictors: (Constant), DASS_Total, Child age, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	2.762	.661		4.181	.000			
	Child age	.206	.069	.222	2.991	.003	.236	.237	.222
	DASS_Total	.136	.030	.335	4.512	.000	.344	.345	.335
2	(Constant)	9.732	2.654		3.667	.000			
	Child age	.165	.068	.177	2.409	.017	.236	.196	.172
	DASS_Total	.068	.035	.168	1.966	.051	.344	.161	.141
	IMP_Dutch_LFA	-.011	.107	-.010	-.102	.919	-.206	-.009	-.007
	IMP_Dutch_CC	.145	.124	.121	1.174	.242	-.174	.097	.084
	IMP_Dutch_EAC	-.310	.157	-.168	-1.978	.050	-.294	-.162	-.142
	IMP_Dutch_NJAPF	-.214	.091	-.251	-2.342	.021	-.400	-.191	-.168
	IMP_Dutch_ENRP	.012	.146	.010	.081	.935	-.323	.007	.006
	IMP_Dutch_EAS	-.154	.161	-.106	-.960	.339	-.278	-.079	-.069

a. Dependent Variable: SDQ Internalizing all ages

Regressions for parent variables (mothers of children)

Parental experiential avoidance (PAAQ Total):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.643[a]	.414	.405	8.71858	.414	45.874	2	130	.000
2	.795[b]	.632	.608	7.07174	.218	12.266	6	124	.000

a. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total
b. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6974.104	2	3487.052	45.874	.000[b]
	Residual	9881.779	130	76.014		
	Total	16855.883	132			
2	Regression	10654.705	8	1331.838	26.632	.000[c]
	Residual	6201.178	124	50.009		
	Total	16855.883	132			

a. Dependent Variable: PAAQ_Total
b. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total
c. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	35.608	1.588		22.429	.000			
	DASS_Total	.460	.086	.383	5.330	.000	.524	.424	.358
	SDQ Internalizing all ages	1.167	.210	.399	5.562	.000	.534	.438	.373
2	(Constant)	79.767	6.101		13.074	.000			
	DASS_Total	.220	.078	.183	2.817	.006	.524	.245	.153
	SDQ Internalizing all ages	.841	.183	.288	4.604	.000	.534	.382	.251
	IMP_Dutch_LFA	.127	.241	.038	.527	.599	-.392	.047	.029
	IMP_Dutch_CC	-.878	.290	-.240	-3.028	.003	-.473	-.262	-.165
	IMP_Dutch_EAC	.383	.354	.071	1.083	.281	-.299	.097	.059
	IMP_Dutch_NJAPF	-.906	.216	-.346	-4.192	.000	-.687	-.352	-.228
	IMP_Dutch_ENRP	-.339	.341	-.096	-.995	.322	-.584	-.089	-.054
	IMP_Dutch_EAS	-.110	.363	-.025	-.304	.762	-.454	-.027	-.017

a. Dependent Variable: PAAQ_Total

Adaptive cognitive emotion regulation (CERQ Adaptive):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.189[a]	.036	.021	12.73059	.036	2.417	2	130	.093
2	.434[b]	.189	.136	11.95710	.153	3.894	6	124	.001

a. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total

b. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	783.329	2	391.664	2.417	.093[b]
	Residual	21068.820	130	162.068		
	Total	21852.149	132			
2	Regression	4123.603	8	515.450	3.605	.001[c]
	Residual	17728.546	124	142.972		
	Total	21852.149	132			

a. Dependent Variable: CERQ_Adaptive

b. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total

c. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	60.034	2.318		25.898	.000			
	DASS_Total	-.189	.126	-.138	-1.497	.137	-.170	-.130	-.129
	SDQ Internalizing all ages	-.299	.306	-.090	-.977	.330	-.139	-.085	-.084
2	(Constant)	32.366	10.316		3.137	.002			
	DASS_Total	-.160	.132	-.117	-1.208	.229	-.170	-.108	-.098

	SDQ Internalizing all ages	-.004	.309	-.001	-.014	.989	-.139	-.001	-.001
	IMP_Dutch_LFA	-.212	.407	-.056	-.522	.602	.095	-.047	-.042
	IMP_Dutch_CC	.436	.490	.105	.891	.375	.250	.080	.072
	IMP_Dutch_EAC	.621	.598	.101	1.038	.301	.219	.093	.084
	IMP_Dutch_NJAPF	.498	.365	.167	1.363	.175	.177	.122	.110
	IMP_Dutch_ENRP	-1.582	.576	-.392	-2.746	.007	.098	-.239	-.222
	IMP_Dutch_EAS	2.075	.615	.409	3.377	.001	.330	.290	.273

a. Dependent Variable: CERQ_Adaptive

Maladaptive cognitive emotion regulation (CERQ Maladaptive):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.646[a]	.417	.399	6.74519	.417	22.883	4	128	.000
2	.747[b]	.557	.521	6.01998	.140	6.450	6	122	.000

a. Predictors: (Constant), SDQ Internalizing all ages, Parent age, DASS_Total, Child age

b. Predictors: (Constant), SDQ Internalizing all ages, Parent age, DASS_Total, Child age, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4164.499	4	1041.125	22.883	.000[b]
	Residual	5823.693	128	45.498		
	Total	9988.191	132			
2	Regression	5566.899	10	556.690	15.361	.000[c]
	Residual	4421.293	122	36.240		
	Total	9988.191	132			

a. Dependent Variable: CERQ_Maladaptive

b. Predictors: (Constant), SDQ Internalizing all ages, Parent age, DASS_Total, Child age

c. Predictors: (Constant), SDQ Internalizing all ages, Parent age, DASS_Total, Child age, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	31.634	4.632		6.829	.000			
	Parent age	-.057	.126	-.037	-.451	.653	-.251	-.040	-.030
	Child age	-.398	.189	-.172	-2.105	.037	-.180	-.183	-.142
	DASS_Total	.536	.068	.580	7.887	.000	.615	.572	.532
	SDQ Internalizing all ages	.175	.166	.078	1.051	.295	.257	.093	.071
2	(Constant)	36.338	6.740		5.391	.000			
	Parent age	-.005	.114	-.003	-.044	.965	-.251	-.004	-.003
	Child age	-.255	.171	-.110	-1.486	.140	-.180	-.133	-.089
	DASS_Total	.398	.067	.430	5.900	.000	.615	.471	.355
	SDQ Internalizing all ages	.121	.159	.054	.762	.448	.257	.069	.046
	IMP_Dutch_LFA	-.016	.209	-.006	-.076	.940	-.272	-.007	-.005
	IMP_Dutch_CC	-.207	.247	-.074	-.839	.403	-.164	-.076	-.051
	IMP_Dutch_EAC	1.029	.309	.247	3.330	.001	.051	.289	.201
	IMP_Dutch_NJAPF	-.581	.184	-.288	-3.161	.002	-.566	-.275	-.190

	IMP_Dutch_ENRP	-.591	.291	-.217	-2.029	.045	-.434	-.181	-.122
	IMP_Dutch_EAS	.594	.311	.173	1.913	.058	-.146	.171	.115

a. Dependent Variable: CERQ_Maladaptive

Overprotection beliefs (PABUA Overprotective):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.341[a]	.116	.103	7.03115	.116	8.546	2	130	.000
2	.423[b]	.179	.126	6.94056	.062	1.569	6	124	.162

a. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total

b. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	845.013	2	422.507	8.546	.000[b]
	Residual	6426.822	130	49.437		
	Total	7271.835	132			
2	Regression	1298.592	8	162.324	3.370	.002[c]
	Residual	5973.243	124	48.171		
	Total	7271.835	132			

a. Dependent Variable: PAB_Overprotection

b. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total

c. Predictors: (Constant), SDQ Internalizing all ages, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	22.207	1.280		17.345	.000			
	DASS_Total	.148	.070	.188	2.134	.035	.268	.184	.176
	SDQ Internalizing all ages	.433	.169	.226	2.559	.012	.292	.219	.211
2	(Constant)	23.076	5.988		3.854	.000			
	DASS_Total	.066	.077	.084	.863	.390	.268	.077	.070
	SDQ Internalizing all ages	.384	.179	.200	2.143	.034	.292	.189	.174
	IMP_Dutch_LFA	-.186	.236	-.085	-.788	.432	-.137	-.071	-.064
	IMP_Dutch_CC	.156	.284	.065	.550	.584	-.038	.049	.045
	IMP_Dutch_EAC	.430	.347	.121	1.237	.218	-.009	.110	.101
	IMP_Dutch_NJAPF	-.557	.212	-.324	-2.626	.010	-.337	-.230	-.214
	IMP_Dutch_ENRP	.324	.334	.139	.968	.335	-.156	.087	.079
	IMP_Dutch_EAS	-.074	.357	-.025	-.206	.837	-.086	-.019	-.017

a. Dependent Variable: PAB_Overprotection

Accommodation (PAS Behaviour):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.506[a]	.256	.232	2.12032	.256	10.995	4	128	.000
2	.575[b]	.331	.276	2.05954	.075	2.278	6	122	.041

a. Predictors: (Constant), SDQ Internalizing all ages, Parent age, Child_gender_categorised, DASS_Total

b. Predictors: (Constant), SDQ Internalizing all ages, Parent age, Child_gender_categorised, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	197.715	4	49.429	10.995	.000[b]
	Residual	575.459	128	4.496		
	Total	773.174	132			
2	Regression	255.688	10	25.569	6.028	.000[c]
	Residual	517.486	122	4.242		
	Total	773.174	132			

a. Dependent Variable: PAS_Behaviour
b. Predictors: (Constant), SDQ Internalizing all ages, Parent age, Child_gender_categorised, DASS_Total
c. Predictors: (Constant), SDQ Internalizing all ages, Parent age, Child_gender_categorised, DASS_Total, IMP_Dutch_CC, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	3.166	1.412		2.243	.027			
	Parent age	-.050	.033	-.117	-1.498	.137	-.203	-.131	-.114
	Child_gender_categorised	.785	.375	.162	2.095	.038	.216	.182	.160
	DASS_Total	.056	.021	.217	2.617	.010	.350	.225	.200
	SDQ Internalizing all ages	.187	.051	.298	3.633	.000	.405	.306	.277
2	(Constant)	5.014	2.322		2.160	.033			
	Parent age	-.038	.034	-.090	-1.141	.256	-.203	-.103	-.085
	Child_gender_categorised	.580	.374	.120	1.550	.124	.216	.139	.115
	DASS_Total	.026	.023	.100	1.113	.268	.350	.100	.082
	SDQ Internalizing all ages	.148	.053	.237	2.772	.006	.405	.243	.205
	IMP_Dutch_LFA	-.141	.072	-.199	-1.957	.053	-.310	-.174	-.145
	IMP_Dutch_CC	.097	.084	.124	1.147	.254	-.117	.103	.085
	IMP_Dutch_EAC	-.033	.105	-.028	-.313	.755	-.178	-.028	-.023
	IMP_Dutch_NJAPF	-.181	.063	-.323	-2.872	.005	-.440	-.252	-.213
	IMP_Dutch_ENRP	.113	.100	.149	1.136	.258	-.260	.102	.084
	IMP_Dutch_EAS	-.002	.107	-.002	-.016	.987	-.150	-.001	-.001

a. Dependent Variable: PAS_Behaviour

Regressions for parent variables (mothers of infants)

Parental experiential avoidance (PAAQ Total):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.473[a]	.224	.198	10.46719	.224	8.514	2	59	.001
2	.809[b]	.654	.602	7.36992	.430	11.002	6	53	.000

a. Predictors: (Constant), DASS_Total, Child age
b. Predictors: (Constant), DASS_Total, Child age, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1865.710	2	932.855	8.514	.001[b]
	Residual	6464.163	59	109.562		
	Total	8329.874	61			
2	Regression	5451.139	8	681.392	12.545	.000[c]
	Residual	2878.735	53	54.316		
	Total	8329.874	61			

a. Dependent Variable: PAAQ_Total
b. Predictors: (Constant), DASS_Total, Child age
c. Predictors: (Constant), DASS_Total, Child age, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	48.181	3.029		15.907	.000			
	Child age	-5.510	1.778	-.356	-3.099	.003	-.345	-.374	-.355
	DASS_Total	.475	.168	.324	2.821	.007	.313	.345	.324
2	(Constant)	109.533	10.917		10.033	.000			
	Child age	-3.099	1.325	-.200	-2.339	.023	-.345	-.306	-.189
	DASS_Total	-.081	.143	-.056	-.568	.573	.313	-.078	-.046
	IMP_Dutch_LFA	.764	.421	.179	1.814	.075	-.246	.242	.146
	IMP_Dutch_CC	-.618	.457	-.148	-1.353	.182	-.531	-.183	-.109
	IMP_Dutch_EAC	.460	.706	.063	.651	.518	-.240	.089	.053
	IMP_Dutch_NJAPF	-1.119	.282	-.429	-3.969	.000	-.650	-.479	-.320
	IMP_Dutch_ENRP	-.972	.494	-.238	-1.967	.054	-.594	-.261	-.159
	IMP_Dutch_EAS	-1.447	.622	-.288	-2.328	.024	-.565	-.305	-.188

a. Dependent Variable: PAAQ_Total

Adaptive cognitive emotion regulation (CERQ Adaptive):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.133[a]	.018	.004	13.69632	.018	1.256	1	70	.266
2	.604[b]	.364	.295	11.52239	.347	5.818	6	64	.000

a. Predictors: (Constant), DASS_Total
b. Predictors: (Constant), DASS_Total, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	235.570	1	235.570	1.256	.266[b]
	Residual	13131.251	70	187.589		
	Total	13366.821	71			
2	Regression	4869.836	7	695.691	5.240	.000[c]
	Residual	8496.985	64	132.765		
	Total	13366.821	71			

a. Dependent Variable: CERQ_Adaptive
b. Predictors: (Constant), DASS_Total
c. Predictors: (Constant), DASS_Total, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	60.691	2.755		22.029	.000			
	DASS_Total	-.229	.204	-.133	-1.121	.266	-.133	-.133	-.133
2	(Constant)	-.275	15.543		-.018	.986			
	DASS_Total	.123	.206	.072	.598	.552	-.133	.075	.060
	IMP_Dutch_LFA	-1.142	.608	-.228	-1.879	.065	.061	-.229	-.187
	IMP_Dutch_CC	1.532	.649	.312	2.360	.021	.493	.283	.235
	IMP_Dutch_EAC	-.021	1.023	-.002	-.020	.984	.229	-.003	-.002
	IMP_Dutch_NJAPF	.708	.406	.231	1.744	.086	.325	.213	.174
	IMP_Dutch_ENRP	-.539	.716	-.113	-.753	.454	.249	-.094	-.075
	IMP_Dutch_EAS	2.372	.898	.402	2.643	.010	.467	.314	.263

a. Dependent Variable: CERQ_Adaptive

Maladaptive cognitive emotion regulation (CERQ Maladaptive):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.679[a]	.461	.453	6.90643	.461	59.776	1	70	.000
2	.755[b]	.570	.523	6.45008	.109	2.709	6	64	.021

a. Predictors: (Constant), DASS_Total
b. Predictors: (Constant), DASS_Total, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2851.265	1	2851.265	59.776	.000[b]
	Residual	3338.917	70	47.699		
	Total	6190.183	71			
2	Regression	3527.558	7	503.937	12.113	.000[c]
	Residual	2662.625	64	41.604		
	Total	6190.183	71			

a. Dependent Variable: CERQ_Maladaptive
b. Predictors: (Constant), DASS_Total
c. Predictors: (Constant), DASS_Total, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	26.633	1.389		19.171	.000			
	DASS_Total	.795	.103	.679	7.732	.000	.679	.679	.679
2	(Constant)	30.132	8.701		3.463	.001			
	DASS_Total	.590	.115	.503	5.114	.000	.679	.539	.419
	IMP_Dutch_LFA	.063	.340	.019	.186	.853	-.177	.023	.015
	IMP_Dutch_CC	.920	.363	.275	2.533	.014	-.054	.302	.208
	IMP_Dutch_EAC	.155	.573	.027	.271	.787	.013	.034	.022
	IMP_Dutch_NJAPF	-.598	.227	-.287	-2.631	.011	-.561	-.312	-.216
	IMP_Dutch_ENRP	-.283	.401	-.087	-.707	.482	-.371	-.088	-.058

	IMP_Dutch_EAS	-.766	.502	-.191	-1.525	.132	-.278	-.187	-.125

a. Dependent Variable: CERQ_Maladaptive

Overprotection beliefs (PABUA Overprotective):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.155[a]	.024	.008	8.63283	.024	1.533	1	62	.220
2	.259[b]	.067	-.049	8.88123	.043	.430	6	56	.856

a. Predictors: (Constant), DASS_Total
b. Predictors: (Constant), DASS_Total, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.260	1	114.260	1.533	.220[b]
	Residual	4620.594	62	74.526		
	Total	4734.854	63			
2	Regression	317.787	7	45.398	.576	.773[c]
	Residual	4417.066	56	78.876		
	Total	4734.854	63			

a. Dependent Variable: PAB_Overprotection
b. Predictors: (Constant), DASS_Total
c. Predictors: (Constant), DASS_Total, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_ENRP, IMP_Dutch_EAS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	26.984	1.843		14.642	.000			
	DASS_Total	.169	.136	.155	1.238	.220	.155	.155	.155
2	(Constant)	30.390	12.718		2.389	.020			
	DASS_Total	.065	.169	.059	.384	.702	.155	.051	.050
	IMP_Dutch_LFA	.496	.497	.157	.998	.323	.034	.132	.129
	IMP_Dutch_CC	.193	.531	.062	.364	.717	-.056	.049	.047
	IMP_Dutch_EAC	.059	.837	.011	.070	.944	-.018	.009	.009
	IMP_Dutch_NJAPF	-.296	.332	-.153	-.893	.376	-.201	-.118	-.115
	IMP_Dutch_ENRP	-.155	.586	-.051	-.264	.792	-.126	-.035	-.034
	IMP_Dutch_EAS	-.556	.734	-.149	-.757	.452	-.126	-.101	-.098

a. Dependent Variable: PAB_Overprotection

Accommodation (PAS Behaviour):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.289[a]	.083	.039	2.71215	.083	1.865	2	41	.168
2	.542[b]	.294	.133	2.57607	.211	1.741	6	35	.141

a. Predictors: (Constant), DASS_Total, Length_practice_for_corrs
b. Predictors: (Constant), DASS_Total, Length_practice_for_corrs, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.436	2	13.718	1.865	.168[b]
	Residual	301.585	41	7.356		
	Total	329.022	43			
2	Regression	96.757	8	12.095	1.823	.106[c]
	Residual	232.265	35	6.636		
	Total	329.022	43			

a. Dependent Variable: PAS_Behaviour
b. Predictors: (Constant), DASS_Total, Length_practice_for_corrs
c. Predictors: (Constant), DASS_Total, Length_practice_for_corrs, IMP_Dutch_EAC, IMP_Dutch_LFA, IMP_Dutch_CC, IMP_Dutch_NJAPF, IMP_Dutch_EAS, IMP_Dutch_ENRP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	4.146	.915		4.533	.000			
	Length_practice_for_corrs	-.955	.847	-.170	-1.128	.266	-.196	-.173	-.169
	DASS_Total	.074	.052	.213	1.415	.165	.234	.216	.212
2	(Constant)	3.820	4.521		.845	.404			
	Length_practice_for_corrs	-1.146	.880	-.204	-1.302	.201	-.196	-.215	-.185
	DASS_Total	.022	.059	.062	.364	.718	.234	.061	.052
	IMP_Dutch_LFA	.228	.176	.226	1.292	.205	-.064	.213	.184
	IMP_Dutch_CC	.313	.187	.316	1.677	.102	-.015	.273	.238
	IMP_Dutch_EAC	.236	.297	.137	.795	.432	-.021	.133	.113
	IMP_Dutch_NJAPF	-.037	.121	-.059	-.302	.765	-.285	-.051	-.043
	IMP_Dutch_ENRP	-.362	.213	-.375	-1.704	.097	-.354	-.277	-.242
	IMP_Dutch_EAS	-.429	.259	-.361	-1.653	.107	-.309	-.269	-.235

a. Dependent Variable: PAS_Behaviour

Mindfulness (2022) 13:430–448
https://doi.org/10.1007/s12671-021-01805-3

Appendix D1

ORIGINAL PAPER

A Mindful Parenting Program for Parents Concerned About Child Internalizing Problems: a Randomized Controlled Feasibility Study

Virginia Burgdorf[1] · **Maree J. Abbott**[1] · **Marianna Szabó**[1]

Accepted: 4 December 2021 / Published online: 15 January 2022

Abstract

Objectives This study sought to establish four aspects of feasibility for a mindful parenting program: demand for the program from parents with concerns regarding their child's internalizing problems, acceptability of the program to those parents, preliminary efficacy, and the likelihood of successful expansion of the program to the intended population.

Methods The study was a pilot, randomized controlled trial comparing a mindful parenting program to waitlist. Participants were parents ($N = 25$) of children aged 3–18 years, with self-reported concerns regarding their child's internalizing problems, recruited from the community. Demand was assessed using recruitment and adherence rates. Acceptability was assessed using parent-reported usefulness. Preliminary efficacy was assessed using parent reports of child internalizing problems, mindful parenting, parenting stress, cognitive emotion regulation, parental experiential avoidance, and parent beliefs about child anxiety. Intervention group parents also provided weekly in-session data on coping in stressful parenting situations. The likelihood of successful expansion was assessed using qualitative feedback on whether and how the program had helped parents manage child internalizing problems, particularly anxiety.

Results Feasibility was established for the four aspects assessed. The program was well-attended and acceptable to parents. Moderate to large effects were found in favor of the intervention group for most parent and child outcomes. Weekly data showed improved coping in difficult parenting situations. Qualitative feedback suggested that parents believed that increased acceptance and empathy had helped them cope with child internalizing problems.

Conclusions Mindful parenting programs may assist parents of children with internalizing problems to manage parenting stress and emotionally regulate themselves, even in difficult parenting moments. They may also reduce child internalizing problems, through improved parental emotion regulation, and greater acceptance of and empathy for their child.

Trial Registration Australian Clinical Trials Registry, registration number ACTRN12620000690954

Keywords Mindful parenting · Child internalizing · Parenting stress · Experiential avoidance · Emotion regulation · Feasibility

Parenting stress occurs when a parent believes that the demands of parenting outweigh their current resources to manage those demands (Östberg et al., 2007). It is associated with a range of negative outcomes, including more emotional problems in parents (Skreden et al., 2012); more social, emotional, and behavioral problems in children (Anthony et al., 2005); and more negative parenting behaviors (Venta et al., 2016), which contribute to poorer outcomes for the child (Pinquart, 2017). While raising a child is stressful for most parents at least some of the time, the parenting stress literature has focused upon parents of children with externalizing problems, such as rule-breaking, aggressive, or other disruptive behavior (Achenbach & Rescorla, 2001), given the strong link between parenting stress and such problems (Barroso et al., 2018). Sources of stress for these parents include child behavioral problems and parent perceptions regarding their child's emotional lability and negativity (Baker et al., 2003; Costa et al., 2017).

Despite there also being a moderately strong association between parenting stress and child internalizing problems (Barroso et al., 2018), such as symptoms of anxiety or depression (Achenbach & Rescorla, 2001), this connection with child internalizing has received less research attention

✉ Virginia Burgdorf
virginia.burgdorf@sydney.edu.au

[1] School of Psychology, The University of Sydney, Sydney, NSW, Australia

(Rodriguez, 2011). The less overt nature of internalizing problems may mean the needs of the families managing these problems are more easily underestimated or overlooked (Clarke-Stewart et al., 2003; Rodriguez, 2011). However, internalizing disorders are amongst the most common types of mental health conditions in children (Polanczyk et al., 2015), with numerous negative outcomes for affected children (Swan & Kendall, 2016). Child internalizing problems also negatively impact families by adding to parenting stress, including by contributing to parental beliefs that the child has a difficult temperament (Fernandes et al., 2020), worries about the child's ability to cope, and disappointment about the child not meeting expectations (Costa et al., 2006). Further, as well as parenting stress being an outcome of child internalizing, longitudinal evidence shows parenting stress is a risk factor for later child internalizing problems (Stone et al., 2016). Parents of children with internalizing difficulties should therefore be supported to reduce or manage their stress levels for their own well-being, and to reduce the risk of contributing to their child's internalizing problems.

One factor that helps parents to cope better with stress is parental mindfulness (Campbell et al., 2017). Mindfulness in parenting involves a parent paying moment-to-moment, non-judgmental, non-reactive attention to their child (Kabat-Zinn & Kabat-Zinn, 1997), which helps them to regulate their emotional experiences as a parent and their behaviors with their child (Duncan et al., 2009). A more mindful parenting style can be developed through mindfulness training (Meppelink et al., 2016). Mindful parenting programs (MPPs) are typically based on mindfulness-based stress reduction (MBSR; Kabat-Zinn et al. 1992) and mindfulness-based cognitive therapy (Segal et al., 2013) programs, but concentrate on particular challenges faced by parents (Bögels et al., 2014). These include being aware and accepting of the "whole" child, rather than focusing on perceived weaknesses or problems, tolerating negative thoughts and emotions regarding the child, perspective-taking and empathizing with the child, and being compassionate towards the child and the self as a parent (Bögels & Restifo, 2013).

Numerous studies have investigated the benefits of MPPs over the past decade. A recent meta-analysis of these studies found that MPPs reduce parenting stress and are associated with reductions in children's internalizing and externalizing problems (Burgdorf et al., 2019). However, most clinical programs have been run for parents of children with a primary externalizing diagnosis (for example, Jones et al., 2018). Only one published study has catered specifically for parents of children with a primary internalizing diagnosis (Racey et al., 2017). As this study did not assess parenting stress, it is not known whether MPPs reduce parenting stress specifically for parents of children with primary internalizing problems. Further, although the adolescents in Racey et al. (2017) reported fewer internalizing symptoms after the intervention, they attended a separate mindfulness course in parallel to the MPP attended by their parents, so it is not known whether their symptoms improved as a result of their own program or the MPP. Accordingly, with the exception of Racey et al., the published literature has assessed internalizing problems only as comorbid symptoms in groups of children where the majority of primary diagnoses were for externalizing disorders. More targeted research is needed to confirm whether MPPs reduce parenting stress and child internalizing problems in families whose primary concern is child internalizing.

Children with primary internalizing problems have a genetic and temperamental vulnerability to internalizing problems, which may be exacerbated by overprotective parenting (Edwards et al., 2010; Rapee, 2012). In contrast, children with comorbid internalizing problems tend to develop these as a result of their primary externalizing problems, for example when these lead to social rejection or academic problems (Willner et al., 2016). Given these different risk factors for primary and comorbid internalizing problems, MPPs could impact the internalizing problems of these two groups of children in different ways. However, the limited research regarding MPPs and child internalizing means that little is known about how mindful parenting might reduce child internalizing problems. According to Burgdorf et al.'s (2019) meta-analysis of MPPs, the majority of which related to children with primary externalizing disorders, reductions in comorbid internalizing problems were not predicted by reductions in parenting stress. Instead, Emerson et al. (2019) found they were partially explained by reductions in parental experimental avoidance, defined as a parent's difficulty experiencing their child's negative feelings and managing their own reactions to those negative feelings (Tiwari et al., 2008). Correlational data from community-recruited families has shown that mindful parenting is related to child internalizing problems and parental experiential avoidance, cognitive emotion regulation, and beliefs about child anxiety (Burgdorf & Szabó, 2021), which are each related to child internalizing symptoms (Drake & Ginsburg, 2012; Wald et al., 2018). Experimental research showing improvements in these parent variables following a MPP would provide further evidence of how more mindful parenting could explain reduced child internalizing in families of children with primary internalizing concerns.

As parent-only MPPs have not been studied specifically in families of children with internalizing problems, it is not known whether these programs will be viewed favorably by their parents. Parents of children who experience anxiety tend to be distressed by and avoidant of both their own and their child's negative emotion (Tiwari et al., 2008), and to believe that shielding their child from negative experiences and distress is beneficial (Kiel et al., 2019; Rousseau & Scharf, 2017). They may, therefore, not wish to change

any avoidant or (over)protective behavior associated with these beliefs by attending a MPP, which encourages parents to remain in contact with the negative emotions both of and relating to their child (Bögels & Restifo, 2013). Similarly, the tendency for parents of children suffering from depression to emotionally withdraw from their child (Yap et al., 2014) may limit parents' desire or motivation to engage in a treatment program which emphasizes emotional connection. Further, this study proposed to recruit parents from the community, since baseline parenting stress is the same for parents of children with a mental health diagnosis and help-seeking parents without a diagnosis (Potharst et al., 2018a). As parenting programs in non-clinical settings can have high attrition rates (Axford et al., 2012), there is also uncertainty about what proportion of enrolled parents would complete the program. Prior to running a full-scale study, it would be prudent to evaluate the feasibility of a MPP for parents recruited in the community, with concerns regarding their child's emotional well-being.

The objective of this study was therefore to investigate several aspects of the feasibility of a mindful parenting program for parents with concerns regarding their child's internalizing problems. Despite the uncertainty, we hypothesized that a mindful parenting program for parents with concerns regarding their child's internalizing problems would be feasible. Specifically, we expected that help-seeking parents would attend the program and find it acceptable. We also expected that the intervention group would report moderate improvements in parenting stress, parental experiential avoidance, cognitive emotion regulation and beliefs about child anxiety, small improvements in child internalizing problems, and that differences between the intervention and control groups would favor the intervention group. Last, we expected that parents would report that the program helped them manage child internalizing symptoms, including anxiety, through improved emotional awareness and acceptance.

Method

Participants

Participants were 25 parents who wished to take part in a pilot randomized controlled trial comparing an 8-week mindful parenting program to waitlist. The sample size was based on the recommendations made by Whitehead et al. (2016) for an 80% powered main trial with two-sided 5% significance, where the standardized effect sizes are expected to be small to medium. Individuals could be included in the study if they were a parent (or acting in the role of parent) with a child aged 3 to 18 years, whose primary self-reported concern regarding their child was the child's internalizing symptoms. Exclusion criteria were (1) parent's inadequate mastery of the English language; (2) parent or child participating in another parenting course or psychological therapy for managing child or parent well-being; (3) parent having organic brain damage; (4) parent having current or historic psychotic or bipolar disorder; (5) parent having current or recent (within last year) substance dependence; (6) parent having significant interpersonal difficulties (such as anti-social behavior); (7) parent at current, moderate to high risk of self-harm or suicide; (8) current substantial risk of abuse of any child in the family; or (9) intellectual disability in the child regarding whom assistance was sought. Intervention group parents were significantly older ($M = 42.45$ years, $SD = 4.85$) than waitlist parents ($M = 37.75$ years, $SD = 4.67$) ($t(21) = 2.37$, $p = .03$). There was no difference in the mean age of children of parents in the intervention ($M = 6.27$ years, $SD = 1.95$) and waitlist ($M = 6.00$ years, $SD = 3.13$) groups. Table 1 contains additional demographic information regarding the participants. There were no significant differences between the parent groups on these demographic variables, or on pre-program scores for any of the outcome variables.

Procedures

The CONSORT 2010 statement: Extension to randomized pilot and feasibility trials (Eldridge et al., 2016) was used to guide the reporting of this trial. Study advertisements were distributed to potential participants in January 2020, either by email to parents who had previously asked to be notified by the University about mindfulness programs for parents, or on Facebook. The Facebook advertisement was displayed over a 10-day period, to individuals located within the metropolitan area of Sydney, Australia, and interested in the topic areas of "Motherhood", "Fatherhood", "Parenting", "Family", or "Parents". The advertisements directed potential participants to a registration of interest form on the data collection website Qualtrics, where they could provide contact details and access the participant information statement and consent form. Of the 125 individuals who registered their interest in participating, 56 were able to be contacted by telephone and assessed for eligibility. Of these individuals, 25 were eligible, able to attend the program on the scheduled dates, and provided consent to participate (see Fig. 1). To ensure allocation concealment during randomization, these 25 participants were randomly allocated on a 1:1 basis to the intervention ($n = 12$) or waitlist control ($n = 13$) groups using the website random.org.

The program delivered in this study was adapted from the 8-week × 3-hour mindful parenting group program developed for parents experiencing parenting stress by Bögels & Restifo (2013). The adapted program consisted of eight weekly 2-hour group sessions: (1) Automatic pilot, (2) Beginner's mind, (3) Reconnecting with the

Table 1 Demographic characteristics of participants

Characteristic	Intervention group (n = 11)		Waitlist group (n = 12)		Group difference
	n	%	n	%	χ^2 (df)
Child gender					0.38 (1)
Female	6	54.5	5	41.7	
Male	5	45.5	7	58.3	
Parent relation to child					0.00 (1)
Mother	10	90.9	11	91.7	
Father	1	9.1	1	8.3	
Caregiver role					1.23 (2)
Primary carer	6	54.5	9	75.0	
Equal carer[a]	4	36.4	2	16.7	
Secondary carer	1	9.1	1	8.3	
No. of children in family					2.04 (2)
1	1	9.1	4	33.3	
2	7	63.6	6	50.0	
3	3	27.3	2	16.7	
Parent cultural identity					2.96 (3)
Australian	10	90.9	10	83.3	
UK	0	0	1	8.3	
Eastern European	0	0	1	8.3	
Middle Eastern	1	9.1	0	0	
Parent highest level of education					.01 (2)
Post-graduate or Bachelor degree	9	81.8	10	83.3	
Associate degree or vocational training	1	9.1	1	8.3	
Secondary school or other	1	9.1	1	8.3	
Parent previous mental health diagnosis					3.16 (1)
Yes	0	0	3	25.0	
No	11	100	9	75.0	
History of mindfulness practice					0.52 (1)
Yes	3	27.3	5	41.7	
No	8	72.7	7	58.3	
Length of mindfulness practice					.04 (1)
< 1 year	2	66.7	3	60.0	
≥ 1 year	1	33.3	2	40.0	
Frequency of mindfulness practice					.04 (1)
< monthly	2	66.7	3	60.0	
≥ monthly	1	33.3	2	40.0	

[a]Equal carer is a parent who reports sharing the care of their child approximately equally with another person

body, (4) Responding versus reacting, (5) Parenting patterns and schemas, (6) Conflict and parenting, (7) Love and limits, and (8) Are we there yet? A mindful path through parenting. Each session consisted of an overview of the session theme/s, group discussion of home practice exercises, formal meditation practices followed by a group inquiry regarding each practice, and mindfulness/visualization exercises and discussions related to the week's theme. The program was run at 6.00–8.00 p.m. on Tuesdays during school term, from February to April 2020. The first five sessions were delivered face-to-face at The University of Sydney, and the remaining three sessions were conducted online using Zoom, due to the closure of the University campus during the COVID-19 pandemic. The program was offered to the control group after all data collection was completed. The program was facilitated by two of the authors, a registered clinical psychology registrar (VB) and a registered clinical psychologist (MS). Both authors have experience working with parents and in group therapy, have a personal mindfulness practice, and

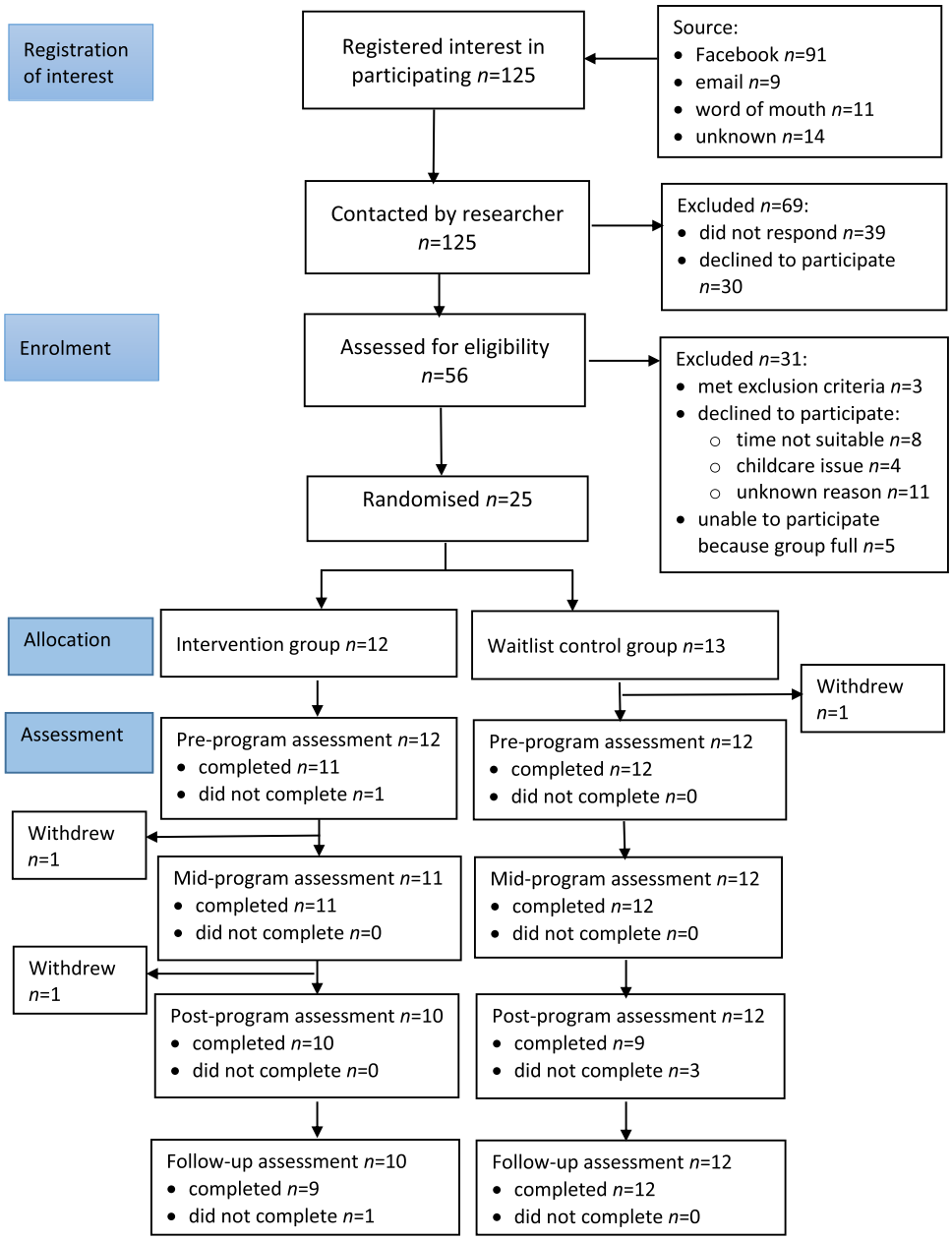


Fig. 1 Flow of participants from registration of interest to follow-up assessment

have completed mindful parenting teacher training with Professor Susan Bögels at the University of Amsterdam.

Some adaptations were made to the Bögels and Restifo (2013) program. Because the program was being run for parents concerned about their child's emotional well-being rather than behavioral problems, in exercises which asked parents to visualize a stressful parenting situation, we used examples such as a child with anxiety refusing to separate from a parent. The weekly session length was reduced from three to two hours, as parents were recruited from the community rather than treatment clinics. We did this by shortening several formal meditation practices, including body scans and sitting meditations, and omitting the yoga practices. Facilitating the final three sessions of the program via Zoom also required some changes to program content and mode of delivery. These changes included omitting the walking meditations, using the Zoom "share screen" function as a whiteboard for parent input during group exercises, and the "breakout rooms" function for parents to work in pairs. For body scans and a standing meditation, some parents chose to turn off their camera during the practice. Apart from these changes, the online sessions were run as similarly as possible to the face-to-face sessions, including the presence of facilitators at all times. Parents were encouraged to act as if they were together in the same room with the facilitators and other group members. For example, parents were

asked to find a private space for the sessions, where they could participate in meditation exercises and group discussions free from interruptions from other family members.

Measures

Feasibility

Bowen et al. (2009) outlined eight potential areas of focus for feasibility studies. We used four of these areas to assess feasibility in this study: Demand, Acceptability, Limited-efficacy testing, and Expansion. Demand relates to the likely use of an intervention by the intended population. We assessed this for parents whose primary concern regarding their child was their internalizing symptoms, through (a) recruitment rates, calculated as the proportion of parents who enrolled in the study (i) after the initial contact from the researchers, and (ii) after registering their interest in participating; (b) attendance rate, being the average attendance rate of parents over 8 sessions; (c) completion rate, being the proportion of parents completing at least 6 of the 8 sessions; (d) withdrawal rate, or the proportion of parents who withdrew from the study after randomization but before the start of the program; and (e) attrition rate, being the proportion of parents who began the program but did not attend at least 4 sessions.

Acceptability refers to the reactions of the participants to an intervention. We assessed acceptability by measuring parent perceptions of program usefulness, including in relation to the COVID-19 pandemic, based on the parent feedback form in Bögels & Restifo (2013). Parents responded to the questions (a) "Which group format did you prefer? (*Face-to-face*/*Online*); (b) "To what extent did the COVID-19 pandemic affect your ability to benefit from the program?" where 1 = *Very positive impact* to 7 = *Very negative impact*; (c) "How important has the training been for you, overall?" on a scale of 1 to 10 (1 = *Not useful at all*, 10 = *Extremely useful*); (d) "Do you feel you got something of lasting value or importance as a result of doing this program?" (*yes*/*no*); and (e) "Would you recommend the program to friends or family members?" (*yes*/*no*).

Limited-efficacy testing refers to obtaining preliminary evidence of program effects with a small sample, in order to estimate sample and effect sizes for a full-scale trial. We obtained preliminary evidence of effects through parent self-reports on the outcome measures described below. Except where otherwise indicated, all self-report questionnaires were completed by parents online, through Qualtrics. The demographic and mindfulness practice information contained in Table 1 was collected from all parents one week prior to the program. The other questionnaires were completed by all parents one week prior to the program (pre-program), after the fourth session (mid-program), upon completion (post-program), and two months after completion (follow-up). The data on weekly coping with parenting stress was collected from intervention group parents weekly, in-session.

Expansion relates to the likelihood of successfully using an existing intervention with a new population or in a different setting. We did this by collecting qualitative feedback from parents regarding whether and how the program had helped them.

Mindful Parenting

The Interpersonal Mindfulness in Parenting Scale (IMP; Duncan, 2007, Duncan et al., 2009) assesses mindful parenting. The items are rated using a 5-point Likert scale, ranging from 1 = *Never True* to 5 = *Always True*. Fourteen items (1, 5, 9–15, 17, 19, 23, 26, 29) are reverse-coded, and higher scores indicate more mindful parenting. We used the 29-item, six-factor version of the IMP, which has the subscales Listening with Full Attention (LFA; "I rush through activities with my child without really being attentive to him/her"), Compassion for the Child (CC; "I am kind to my child when he/she is upset"), Non-judgmental Acceptance of Parental Functioning (NJAPF; "I tend to be hard on myself when I make mistakes as a parent"), Emotional Awareness of the Child (EAC; "It is hard for me to tell what my child is feeling"), Emotional Awareness of Self (EAS; "When I'm upset with my child, I notice how I am feeling before I take action"), and Emotional Non-reactivity in Parenting (ENRP; "I often react too quickly to what my child says or does") (Burgdorf & Szabó, 2021; de Bruin et al., 2014). A total score is calculated by summing all items. The IMP has demonstrated good convergent and divergent validity (Burgdorf & Szabó, 2021; de Bruin et al., 2014). Pre-program internal consistency (Cronbach's alpha) and reliability (McDonald's omega; see Hayes & Coutts, 2020 and McDonald, 1999) in the current sample were $\alpha = .72$, $\omega = .72$ for LFA; $\alpha = .90$, $\omega = .91$ for CC; $\alpha = .85$, $\omega = .86$ for NJAPF; $\alpha = .82$, $\omega = .82$ for EAC; $\alpha = .81$, $\omega = .83$ for EAS; $\alpha = .80$, $\omega = .83$ for ENRP; and $\alpha = .93$, $\omega = .92$ for IMP Total. Post-program internal consistency was $\alpha = .83$, $\omega = .86$ for LFA; $\alpha = .90$, $\omega = .90$ for CC; $\alpha = .91$, $\omega = .91$ for NJAPF; $\alpha = .69$, $\omega = .74$ for EAC; $\alpha = .93$, $\omega = .93$ for EAS; $\alpha = .91$, $\omega = .91$ for ENRP; and $\alpha = .95$, $\omega = .95$ for IMP Total.

Parenting Stress

The 18-item Parental Stress Scale (PSS; Berry & Jones, 1995) measures stress associated with the parenting role, for example "I feel overwhelmed by the responsibility of being a parent". The items are rated on a 5-point scale, going from 1 = *Strongly disagree* to 5 = *Strongly agree*. Items 1, 2, 5–8, 17, and 18 are reverse-scored, with a

higher score indicating more parenting-related stress. Berry & Jones (1995) reported good convergent and discriminant validity for the PSS, and high internal consistency. In this study, pre-program $\alpha = .74$ and $\omega = .67$ and post-program $\alpha = .78$ and $\omega = .69$.

Cognitive Emotion Regulation

The Cognitive Emotion Regulation Questionnaire – Short Form (CERQ; Garnefski & Kraaij, 2006) contains 18 items measuring the cognitive emotion regulation strategies that an individual tends to use in negative situations. Responses are given on a 5-point scale ranging from 1 = *(Almost) never* to 5 = *(Almost) always*. The CERQ contains five subscales (Acceptance, Positive Refocusing, Refocus on Planning, Putting into Perspective, Positive Reappraisal) that can be combined into an Adaptive scale, measuring generally helpful strategies, for example "I think about how to change the situation". It also contains four subscales (Self-blame, Other-blame, Rumination, Catastrophizing) that can be combined into a Maladaptive scale, measuring generally unhelpful strategies, for example "I think that basically the cause must lie within myself". A higher scale score indicates more frequent use of the strategies in that scale. The short form CERQ has demonstrated acceptable validity and internal consistency (Garnefski & Kraaij, 2006). In this study, however, items 22 and 27 from the CERQ Adaptive scale had very low item-total correlations (.07 and −.07, respectively), so were excluded from the scale. In this study, for the shortened Adaptive scale, $\alpha = .74$ and $\omega = .74$ pre-program and $\alpha = .85$, $\omega = .78$ post-program. For the Maladaptive scale, $\alpha = .83$, $\omega = .85$ pre-program and $\alpha = .65$, $\omega = .66$ post-program.

Parental Experiential Avoidance

The Parental Acceptance and Action Questionnaire (PAAQ; Cheron et al., 2009) measures experiential avoidance in parenting, being a parent's unwillingness to witness their child's negative emotion and their inability to manage their own reactions to those negative feelings, for example "I try hard to avoid having my child feel depressed or anxious". There are 15 items rated on a 7-point scale from 1 = *Never true* to 7 = *Always true*. Items 1, 5–7, 10, and 11 are reverse-scored and higher scores indicate more experiential avoidance. The items are summed to create a total score. Cheron et al. (2009) have reported the PAAQ's concurrent validity and adequate internal consistency. In this study, pre-program $\alpha = .80$, $\omega = .79$, and post-program $\alpha = .85$, $\omega = .84$.

Parent Beliefs Regarding Child Anxiety

The Parental Attitudes, Beliefs and Understanding about Anxiety Scale (PABUA; Wolk et al., 2016) measures a parent's beliefs and attitudes about their child's anxiety, with three scales: Overprotection, Approach, and Distress. Wolk et al. (2016) reported the PABUA to have adequate to good internal consistency and good convergent and divergent validity, but in this study the Approach and Distress scales were excluded from analyses due to poor internal consistency and reliability (Approach: $\alpha = .46$, $\omega = .59$ pre-program and $\alpha = .49$, $\omega = .72$ post-program; Distress: $\alpha = .54$, $\omega = .54$ pre-program and $\alpha = .56$, $\omega = .60$ post-program). We therefore used only the Overprotection scale, which measures parent beliefs about the need to protect their child from anxiety. Pre-program $\alpha = .79$, $\omega = .81$ and post-program $\alpha = .77$, $\omega = .75$. The 11 items in the Overprotection scale, for example "It is important that I protect my child from feeling anxious", are answered on a 5-point scale, from 1 = *Strongly disagree* to 5 = *Strongly agree*, with higher scores indicating less helpful beliefs about anxiety.

Child Internalizing Symptoms

We used the parent report versions of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000, 2001) for preschool-aged children (3–5 years) and school-aged children (6–18 years), to assess child internalizing, with the broadband Internalizing Problems Scale (33 items, for example "Unhappy, sad or depressed" and "Too fearful or anxious"). The items have a 3-point response scale, where 0 = *Not true (as far as you know)*, 1 = *Somewhat or sometimes true*, and 2 = *Very true or often true*. A higher score indicates more problems. The CBCL has strong convergent and discriminant validity and internal consistency (Achenbach & Rescorla, 2000, 2001). In this sample, the Internalizing scale had pre-program Cronbach's alphas of .83 (school-age) and .84 (preschool-age) and post-program alphas of .85 (school-age) and .63 (preschool-age). Reliability could not be calculated using McDonald's omega due to some items having zero variance. This is likely to be due to the restricted range of symptom severity amongst children of community-recruited families.

Weekly Coping with Parenting Stress

To investigate whether the intervention group parents were benefitting from the program at specific moments of parenting stress, not just at a general trait level, we assessed the intensity of parenting stress, and various aspects of parents' mindfulness, weekly throughout the program in relation to specific, stressful parenting situations. At the beginning of each of the eight sessions, intervention group parents were

guided to visualize a stressful or difficult situation that they had experienced in the past week with or relating to their child. They were encouraged to imagine themselves back in that situation, and to recall as vividly as possible what they were thinking and feeling at the time. In-session, immediately following that guided visualization, we assessed intensity of parenting stress ("During this difficult situation regarding your child, how intensely did you feel stressed (or overwhelmed or unable to cope)?" on a scale of 1 = *Not at all* to 7 = *Extremely intensely*). In relation to parents' experiences during that difficult situation, we assessed (1) the ability to decenter from thoughts and emotions ("I experienced my thoughts and/or feelings as events in my mind, rather than as reflections of reality"), (2) experiential avoidance ("I wished I did not have to deal with what was happening" and "It was unpleasant or uncomfortable to experience my own emotions, and/or watch my child's emotions"), and (3) self-regulation ("I paused to notice how I was feeling about the situation, before I did anything else"). These statements were rated on a scale of 1 = *Not at all true* to 7 = *Extremely true*. For the 5 face-to-face sessions, these assessments were completed on paper by parents individually, without discussion, with a facilitator collecting the questionnaires prior to the rest of the session proceeding. For the 3 Zoom sessions, parents received a personal link to the questionnaire on Zoom, and submitted their answers online prior to the rest of the session proceeding.

Qualitative Assessment of Pathways from Mindful Parenting to Child Internalizing

After program completion, the parents were asked the following questions online, through Qualtrics, about whether and how they believed the program had helped them as parents, including in relation to any perceived child anxiety: (1) Has your relationship with your emotions changed? If yes, how? (2) Did the program change the way you experience your child? If yes, how has this changed? (3) Do you think mindfulness can help you cope with your child's anxiety? If yes, how do you think it will help? (4) Did the mindful parenting program change the way you view your child's anxiety? If yes, how did this change?

The initial questions were kept short and closed (*yes/no*), and were then immediately followed by a broad, open question (*If yes, how…?*). This technique is recommended for the online collection of qualitative data, in order to sufficiently direct participants' attention to the issues the researcher wishes them to consider, while providing participants the freedom to explain what their own thoughts or experiences were regarding those issues (Braun et al., 2020). The questions directed parents' attention to whether they changed their relationship with their own and their child's emotions, and whether they believed an aspect of mindfulness was behind this change, because we were interested to know whether the beliefs that parents expressed about these issues converged with any changes under the self-report measures, in particular the IMP.

Data Analyses

To examine within- and between-group differences between pre-program scores, and mid-program, post-program, and 2-month follow-up scores, we used Microsoft Excel (2003) to calculate Cohen's *d* standardized mean difference effect sizes. For within-group analyses, we used the difference between time 1 and 2 means divided by the standard deviation within group and assumed a correlation of $r = 0.7$ to calculate the standard deviation within group (for details, see Borenstein et al., 2009). For the between-group analyses, although there were no significant differences between groups on pre-program outcome scores, this may have been partly due to the low numbers in each group. In order to account for any pre-program differences between groups, we therefore used the difference between the treatment and control group change scores, divided by the pooled pre-program standard deviations (for details, see Morris, 2008). An effect size of 0.2 represents a small effect, 0.5 a moderate effect, and 0.8 a large effect (Cohen, 1988). In line with CONSORT guidelines for reporting results of pilot trials that are not powered to test effectiveness, we did not test for statistical significance of these within- or between-group changes (Eldridge et al., 2016).

For the intervention group's weekly coping data, we conducted repeated-measures ANOVAs using IBM SPSS Statistics for Windows (version 26), to examine the pattern of change in that data across the 8-week program. As there were numerous trends in the data that could have been reported, we have reported only the largest of the trends that reached statistical significance. We also conducted reliable change analyses of self-report outcomes for intervention group parents, using Microsoft Excel (2003). These analyses are suitable for small samples (Zahra & Hedge, 2010) and indicate whether an individual participant's change is clinically significant, or greater than could occur due to measurement error. Reliable change occurs when the difference between a participant's pre- and post-program scores, divided by the standard error of the difference, is greater than 1.96 (Jacobson & Truax, 1991). The standard error of the difference has been calculated using the pre-program Cronbach's alpha, and the standard deviation of the intervention group for each measure (for details, see Busch et al., 2011).

For the qualitative investigation of possible pathways between mindful parenting and child internalizing, we used thematic analysis (Braun & Clarke, 2006) to examine parent feedback regarding changes in parenting. Following

the process set out by Braun & Clarke (2006), one author (VB) and a doctoral level clinical psychology post-graduate student read the parent responses to familiarize themselves with the data, then independently coded the data by hand, based on its surface or apparent meaning (Braun & Clarke, 2006), and identified potential themes amongst the coded data. Next, these two researchers refined the list of themes by reviewing the potential themes together, checking that the individual pieces of coded data fit with the proposed themes and agreeing a final list of themes. The themes were then defined by VB and are reported in this paper.

Results

Demand

Figure 1 shows the flow of participants through the study, including registrations of interest, enrolment, allocation to groups, and measurement points. Table 2 shows participant recruitment rates by initial contact and number of registrations. Of the individuals initially contacted via Facebook, and who went on to register their interest in participating in the study, 22.0% were enrolled in the study. Overall, 2.1% of individuals contacted via Facebook enrolled in the study. For those individuals contacted by email who subsequently registered their interest in participating, 22.2% enrolled. Overall, we enrolled 3.4% of the individuals contacted by email.

The average attendance rate of intervention group parents ($n = 12$) was six out of eight sessions (75%). Two parents were unable to continue their attendance after the fourth session for reasons related to the COVID-19 pandemic. Nine of the 12 parents attended at least six sessions, giving a completion rate of 75%. One parent from each of the intervention and waitlist ($n = 13$) groups withdrew from the study after randomization but before the intervention began, giving a withdrawal rate of 8%. Two of the 12 intervention group parents completed less than four sessions, giving an attrition rate of 16.7%.

Acceptability

In relation to perceived usefulness of the program and the impact of COVID-19, 100% of parents reported that they preferred face-to-face over online groups. Twenty percent of parents reported that the pandemic had a very positive impact on their ability to benefit from the program, while 60% said it had a minor negative impact and 20% said it had a moderate negative impact. Despite the majority of parents reporting that the pandemic negatively affected their ability to benefit from the program, parents reported that the program had been important for them, with 20% rating the program an 8, 40% rating it a 9, and 40% rating it a 10, on a scale of *1 = Not useful at all*, *10 = Extremely useful*. In addition, 100% of parents reported that they believed they had got something of lasting value or importance as a result of doing the program, and 100% of parents reported that they would recommend the program to family or friends.

Limited-Efficacy Testing

The means and standard deviations for each outcome at each measurement point are shown in Table 3, for both intervention and waitlist groups. Table 4 shows the within- and between-group Cohen's *d* effect sizes for the changes in those outcomes. Between-group differences all favored the intervention group. At program completion (T3), differences between the intervention and waitlist control groups were moderate to large, except for CERQ Adaptive, where the difference was small, and CBCL Pre-school Internalizing, which was negligible. At follow-up (T4), the differences remained moderate to large, except for CBCL Pre-school Internalizing and IMP Compassion for the Child, where the differences were negligible, and CERQ Adaptive, where the differences were small.

In relation to within-group changes, the intervention group outcomes generally improved from pre- to mid-program (T1-T2) and from mid- to post-program (T2-T3). At program completion (T1-T3), the intervention group showed moderate to large improvements from pre-program on all

Table 2 Participant recruitment rates

Location of study advertisement	Initial contacts made[a] (*n*)	Registrations of interest (*n*)	Study enrolments (*n*)	Recruitment rate by contact[b]	Recruitment rate by registration[c]
Facebook	965	91	20	2.1%	22.0%
Email	58	9	2	3.4%	22.2%
Other[d]	-	25	3	-	12.0%
Total	1023	125	25	2.4%	20.0%

[a]For email = number of study advertisement emails sent; for Facebook = number of engagements by Facebook users with the post advertising the study; [b]enrolments as a percentage of initial contacts; [c]enrolments as a percentage of registrations of interest; [d]parents who heard about the study through word-of-mouth and independently approached the researchers; as the researchers did not initiate contact with these parents, no recruitment rate by contact is available for this category

Table 3 Means and standard deviations for child and parent outcomes, for intervention and waitlist control groups

	Pre-program (T1)			Mid-program (T2)			Post-program (T3)			Follow-up (T4)		
	M	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*
IMP Total												
Intervention	93.91	12.28	11	101.45	10.70	11	106.40	11.23	10	108.78	13.99	9
Waitlist	93.83	15.04	12	96.92	17.98	12	91.67	16.82	9	96.83	15.01	12
IMP LFA												
Intervention	15.55	2.25	11	16.82	1.72	11	17.50	2.01	10	18.33	2.24	9
Waitlist	15.08	2.11	12	16.00	3.10	12	14.67	2.12	9	15.33	2.84	12
IMP CC												
Intervention	23.91	4.28	11	24.82	3.06	11	25.40	3.92	10	25.44	4.59	9
Waitlist	23.58	3.55	12	23.58	3.45	12	22.78	2.91	9	24.92	2.87	12
IMP NJAPF												
Intervention	17.18	4.75	11	18.55	4.39	11	20.50	3.24	10	21.56	4.10	9
Waitlist	17.33	4.19	12	17.33	5.05	12	15.78	5.74	9	17.17	4.22	12
IMP EAC												
Intervention	10.45	1.29	11	10.91	1.22	11	11.70	1.06	10	11.78	1.86	9
Waitlist	11.50	2.07	12	11.58	2.35	12	12.00	1.41	9	11.50	1.93	12
IMP EAS												
Intervention	11.45	1.69	11	13.73	2.00	11	14.10	1.79	10	13.78	2.44	9
Waitlist	11.58	3.06	12	12.83	3.07	12	11.89	4.88	9	12.58	3.80	12
IMP ENRP												
Intervention	15.36	2.66	11	16.64	3.11	11	17.20	2.62	10	17.89	3.14	9
Waitlist	14.75	3.96	12	15.58	4.78	12	14.56	4.59	9	15.33	4.05	12
PSS												
Intervention	44.45	5.05	11	41.18	5.49	11	37.30	6.58	10	34.00	4.97	9
Waitlist	44.25	7.81	12	44.25	8.78	12	44.67	3.97	9	43.17	9.08	12
CERQ Adaptive												
Intervention	22.45	5.32	11	22.09	4.66	11	23.30	7.38	10	25.00	6.25	9
Waitlist	21.75	4.35	12	22.17	3.21	12	22.00	2.12	9	23.58	4.58	12
CERQ Maladaptive												
Intervention	20.45	6.62	11	17.45	3.75	11	17.10	3.07	10	16.44	1.94	9
Waitlist	18.58	2.87	12	19.33	3.39	12	18.33	4.50	9	18.08	3.29	12
PAAQ Total												
Intervention	57.18	10.00	11	48.45	9.84	11	45.80	11.15	10	45.22	8.38	9
Waitlist	54.42	12.44	12	54.42	12.77	12	57.44	9.19	9	52.42	11.93	12
PABUA Overprotection												
Intervention	29.18	7.80	11	24.64	6.92	11	25.70	6.18	10	25.44	9.49	9
Waitlist	27.17	5.22	12	26.50	5.92	12	26.44	5.90	9	27.33	4.79	12
CBCL School Internalizing												
Intervention	14.63	7.73	8	10.63	4.57	8	11.86	3.89	7	9.50	4.18	6
Waitlist	11.17	5.08	6	10.60	7.23	5	15.50	10.75	4	15.20	13.55	5
CBCL Preschool Internalizing												
Intervention	15.67	6.66	3	17.33	6.66	3	15.33	8.34	3	15.00	4.58	3
Waitlist	16.33	8.59	6	14.29	8.50	7	15.60	2.70	5	16.00	9.61	7

IMP Total is Interpersonal Mindfulness in Parenting (IMP) Total Scale; *IMP LFA* is IMP Listening with Full Attention Scale; *IMP CC* is IMP Compassion for the Child Scale; *IMP NJAPF* is IMP Non-judgmental Acceptance of Parental Functioning Scale; *IMP EAC* is IMP Emotional Awareness of the Child Scale; *IMP EAS* is IMP Emotional Awareness of the Self Scale; *IMP ENRP* is IMP Emotional Non-reactivity in Parenting Scale; *PSS* is Parental Stress Scale; *CERQ Adaptive* is Adaptive Scale, Cognitive Emotion Regulation Questionnaire – Short Form (CERQ); *CERQ Maladaptive* is Maladaptive Scale, CERQ; *PAAQ Total* is Total Scale, Parental Acceptance and Action Questionnaire; *PABUA Overprotection* is Overprotection Scale, Parental Attitudes, Beliefs and Understanding about Anxiety Scale; *CBCL School Internalizing* is Internalizing Scale, Child Behavior Checklist (CBCL) 6–18 years; *CBCL Preschool Internalizing* is Internalizing Scale, CBCL 3–5 years

Table 4 Cohen's *d* within- and between-group effect sizes for child and parent outcomes

Outcomes	Within-group effects[a]					Between-group effects[b]		
	T1-T2	T2-T3	T3-T4	T1-T3	T1-T4	T1	T3	T4
IMP Total	0.84	0.48	0.35	0.96	1.15	0.01	1.02	0.83
IMP LFA	0.64	0.26	0.54	0.67	0.82	0.22	1.04	1.12
IMP CC	0.28	0.25	0.01	0.48	0.48	0.08	0.56	0.05
IMP NJAPF	0.39	0.41	0.28	0.65	0.98	−0.03	1.05	0.98
IMP EAC	0.31	0.50	0.05	0.77	0.78	−0.60	0.42	0.74
IMP EAS	0.86	0.15	−0.15	0.94	0.90	−0.05	0.90	0.51
IMP ENRP	0.60	0.89	0.28	0.67	0.93	0.18	0.58	0.52
PSS	0.57	0.56	0.43	0.89	1.18	0.03	1.10	1.36
CERQ Adaptive	−0.07	0.19	0.21	0.16	0.31	0.19	0.12	0.14
CERQ Maladaptive	0.47	0.09	0.20	0.47	0.55	−0.37	0.60	0.67
PAAQ Total	0.76	0.31	0.07	0.77	0.86	−0.24	1.22	0.85
PABUA Overprotection	0.83	−0.18	0.04	0.43	0.42	−0.31	0.40	0.57
CBCL School Internalizing	0.55	−0.29	0.39	0.26	0.40	−0.51	0.98	1.27
CBCL Preschool Internalizing	−0.27	0.25	0.03	0.03	0.19	0.08	0.04	0.04

[a]Within-group, a negative effect size indicates a deterioration in the outcome; [b]between-group, a negative effect size indicates that the effect favors the waitlist control group; *T1* pre-program; *T2* mid-program; *T3* post-program; *T4* 2-month follow-up; *IMP Total* is Interpersonal Mindfulness in Parenting (IMP) Total Scale; *IMP LFA* is IMP Listening with Full Attention Scale; *IMP CC* is IMP Compassion for the Child Scale; *IMP NJAPF* is IMP Non-judgmental Acceptance of Parental Functioning Scale; *IMP EAC* is IMP Emotional Awareness of the Child Scale; *IMP EAS* is IMP Emotional Awareness of the Self Scale; *IMP ENRP* is IMP Emotional Non-reactivity in Parenting Scale; *PSS* is Parental Stress Scale; *CERQ Adaptive* is Adaptive Scale, Cognitive Emotion Regulation Questionnaire – Short Form (CERQ); *CERQ Maladaptive* is Maladaptive Scale, CERQ; *PAAQ Total* is Total Scale, Parental Acceptance and Action Questionnaire; *PABUA Overprotection* is Overprotection Scale, Parental Attitudes, Beliefs and Understanding about Anxiety scale; *CBCL School Internalizing* is Internalizing Scale, Child Behavior Checklist (CBCL) 6–18 years; *CBCL Preschool Internalizing* is Internalizing Scale, CBCL 3–5 years

outcomes except CBCL Pre-school Internalizing, which showed negligible change, and CBCL School Internalizing and CERQ Adaptive, which both showed small improvements. Small to moderate improvements then continued to be made on most outcomes between program completion and 2-month follow-up (T3-T4), such that at follow-up (T1-T4), the improvements from pre-program remained moderate to large, except for CBCL Pre-school Internalizing and CERQ Adaptive, which were small.

Figure 2 shows the pattern of weekly change in intensity of stress, experiential avoidance, self-regulation, and decentering from mental events, for specific moments of parenting stress experienced by parents. Intensity of stress fell from weeks 1 ($M = 4.18$, $SD = 1.40$) to 8 ($M = 2.89$, $SD = 1.22$) in a strong cubic pattern ($p < .001$, $\eta_p^2 = .80$). In those stressful situations, experiential avoidance also fell (week 1 $M = 5.00$, $SD = 1.10$; week 8 $M = 2.67$, $SD = 1.02$) in a strong quadratic ($p < .001$, $\eta_p^2 = .78$) manner, while self-regulation increased (week 1 $M = 2.73$, $SD = 1.62$; week 8 $M = 4.00$, $SD = 1.34$) in a strong cubic ($p = .02$, $\eta_p^2 = .41$) manner. However, parents' ability to decenter from mental events deteriorated from week 1 ($M = 3.64$, $SD = 1.36$) to week 8 ($M = 2.89$, $SD = 1.30$), with no particular pattern evident in this deterioration (all $ps > .05$). The patterns indicate that over the course of the program, parents experienced improvements in intensity of stress, experiential avoidance, and self-regulation, albeit with some deterioration in the week leading up to and immediately after the declaration of the COVID-19 pandemic.

Based on the reliable change analyses, Table 5 shows the proportions of intervention group participants who reliably improved, improved, did not change, deteriorated, and reliably deteriorated, on each outcome. Post-program, reliable improvements were seen in 20% of participants on the Parenting Stress Scale, 50% or more of participants on the IMP Total and Emotional Awareness of Self, and PAAQ Total scales, and in 10–40% of participants on the remaining seven parent outcomes listed in Table 5. At follow-up, the proportions were similar, with reliable improvements in 55% or more of participants on the Parenting Stress Scale, IMP Total and Emotional Non-reactivity in Parenting, and PAAQ Total, and in 11–33% of participants on the remaining eight outcomes. Reliable deterioration was seen in one participant at post-program, for PAAQ Total, and by that same participant and one other at follow-up, for PAAQ Total and CERQ Adaptive. For child outcomes post-program, one of seven school-aged children (14%) and one of three preschool-aged children (33%) showed reliable improvement in

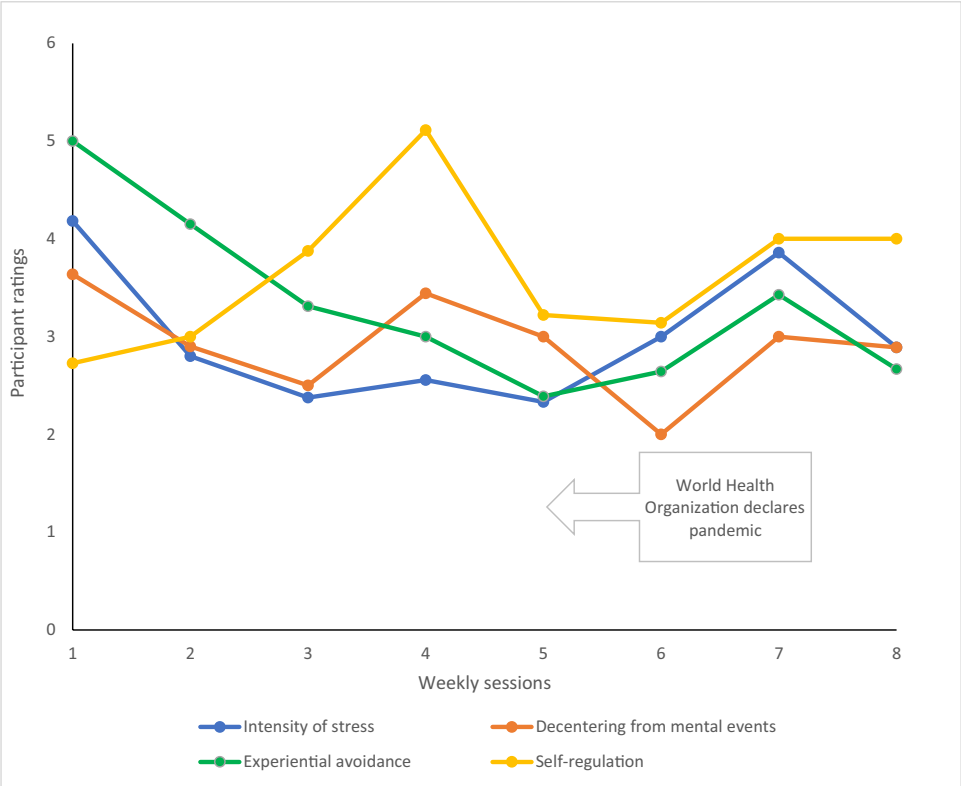


Fig. 2 Participant change in intensity of stress and mindfulness, in stressful parenting situations. *Note*. Lower scores represent less intense stress and experiential avoidance, but poorer self-regulation and decentering

internalizing symptoms. At follow-up, two of six school-age children (33%) and none of three preschool-aged children showed reliable improvements.

Expansion

Ten of the 11 intervention group parents provided post-program feedback regarding whether and how their parenting changed after the program, including in relation to perceived child anxiety. Six themes were identified in this feedback: present-moment awareness, intensity of emotional experience, acceptance, self-regulation, empathy, and self-compassion. Table 6 describes these themes and gives examples illustrating each one.

Discussion

This study investigated the feasibility of a mindful parenting program for parents concerned about their child's internalizing problems. We explored demand for the program success by measuring recruitment, attendance, completion and attrition rates, and acceptability of the program by obtaining feedback on usefulness. To explore ways that mindful parenting might reduce child internalizing, we sought estimates of likely effect sizes in a future definitive trial of the program, for changes in child internalizing problems, mindful parenting, parenting stress, parental experiential avoidance, cognitive emotion regulation, and beliefs about child anxiety. We also used qualitative feedback from parents to explore whether and how mindful parenting might help them cope with child internalizing problems, particularly anxiety.

As hypothesized, there is demand for the program from parents concerned about their child's internalizing symptoms. The recruitment rates were 2.1% (by Facebook advertisement) and 3.4% (by email). While low, these rates compare favorably to the mean rate of 7% reported in a review of studies using Facebook to recruit for health research (Whitaker et al., 2017). The great majority of the reviewed studies involved only online surveys, whereas this study involved attending a 16-hour program in addition to the collection of data at four points over a four-month period. The attendance and completion rates in this study were both 75%. This rate is acceptable compared to rates reported by other mindful parenting intervention studies, for example, 50% attended at least 4 of 8 sessions in Bögels et al. (2008), 74% attended at least 4 of 8 sessions in Mann et al. (2016), and 84% completed at least 6 of 8 sessions in Racey et al. (2017). While the completion rate was lower than that in Racey et al., this was at least partly attributable to the declaration of the COVID-19 pandemic, which prevented two parents (16.7% of the group) from attending after the fifth session. Acceptability is indicated by parent-reported usefulness of the program. Despite most parents believing the

Table 5 Reliability of change on each outcome in intervention group participants, from pre- to post-program, and pre-program to follow-up

Outcomes	Reliable improvement[a]				Improvement[b]				No change[c]				Deterioration[d]				Reliable deterioration[e]			
	T1-T3		T1-T4		T1-T3		T1-T4		T1-T3		T1-T4		T1-T3		T1-T4		T1-T3		T1-T4	
	n/n[f]	%	*n/n*	%	*n/n*	%	*n/n*	%	*n/n*	%	*n/n*	%	*n/n*	%	*n/n*	%	*n/n*	%	*n/n*	%
IMP Total	7/10	70.0	6/9	66.7	3/10	30.0	3/9	33.3	0/10	0.0	0/9	0.0	0/10	0.0	0/9	0.0	0/10	0.0	0/9	0.0
IMP LFA	4/10	40.0	3/9	33.3	3/10	30.0	6/9	66.7	2/10	20.0	0/9	0.0	1/10	10.0	0/9	0.0	0/10	0.0	0/9	0.0
IMP CC	2/10	20.0	2/9	22.2	3/10	30.0	4/9	44.4	3/10	30.0	1/9	11.1	2/10	20.0	2/9	22.2	0/10	0.0	0/9	0.0
IMP NJAPF	3/10	30.0	2/9	22.2	5/10	50.0	6/9	66.7	1/10	10.0	1/9	11.1	1/10	10.0	0/9	0.0	0/10	0.0	0/9	0.0
IMP EAC	4/10	40.0	1/9	11.1	3/10	30.0	4/9	44.4	2/10	20.0	4/9	44.4	1/10	10.0	0/9	0.0	0/10	0.0	0/9	0.0
IMP EAS	5/10	50.0	2/9	22.2	4/10	40.0	5/9	55.6	1/10	10.0	2/9	22.2	0/10	0.0	0/9	0.0	0/10	0.0	0/9	0.0
IMP ENRP	4/10	40.0	5/9	55.6	4/10	40.0	1/9	11.1	1/10	10.0	3/9	33.3	1/10	10.0	0/9	0.0	0/10	0.0	0/9	0.0
PSS	2/10	20.0	5/9	55.6	7/10	70.0	4/9	44.4	0/10	0.0	0/9	0.0	1/10	10.0	0/9	0.0	0/10	0.0	0/9	0.0
CERQ Adaptive	1/10	10.0	3/9	33.3	4/10	40.0	2/9	22.2	1/10	10.0	2/9	22.2	4/10	40.0	1/9	11.1	0/10	0.0	1/9	11.1
CERQ Maladaptive	2/10	20.0	2/9	22.2	4/10	40.0	3/9	33.3	1/10	10.0	2/9	22.2	3/10	30.0	2/9	22.2	0/10	0.0	0/9	0.0
PAAQ Total	8/10	80.0	7/9	77.8	1/10	10.0	1/9	11.1	0/10	0.0	0/9	0.0	0/10	0.0	0/9	0.0	1/10	10.0	1/9	0.0
PABUA Overprotection	2/10	20.0	1/9	11.1	4/10	40.0	5/9	55.6	0/10	0.0	1/9	11.1	4/10	40.0	2/9	22.2	0/10	0.0	0/9	0.0
CBCL School Internalizing	1/7	14.3	2/6	33.3	4/7	57.1	1/6	16.7	1/7	14.3	2/6	33.3	1/7	14.3	1/6	16.7	0/7	0.0	0/6	0.0
CBCL Preschool Internalizing	1/3	33.3	0/3	0.0	0/3	0.0	1/3	33.3	0/3	0.0	1/3	33.3	2/3	66.7	1/3	33.3	0/3	0.0	0/3	0.0

[a]Standardized difference score (Δ) shows improvement ≥ 1.96; [b]Δ shows improvement > 0 but < 1.96; [c]Δ = 0; [d]Δ shows deterioration > 0 but < 1.96; [e]Δ shows deterioration ≥ 1.96; [f]*n/n* is the number of participants with change at each level, out of the number of participants for whom data was available; *IMP Total* is Interpersonal Mindfulness in Parenting (IMP) Total Scale; *IMP LFA* is IMP Listening with Full Attention Scale; *IMP CC* is IMP Compassion for the Child Scale; *IMP NJAPF* is IMP Non-judgmental Acceptance of Parental Functioning Scale; *IMP EAC* is IMP Emotional Awareness of the Child Scale; *IMP EAS* is IMP Emotional Awareness of the Self Scale; *IMP ENRP* is IMP Emotional Non-reactivity in Parenting Scale; *PSS* is Parental Stress Scale; *CERQ Adaptive* is Adaptive Scale, Cognitive Emotion Regulation Questionnaire – Short Form (CERQ); *CERQ Maladaptive* is Maladaptive Scale, CERQ; *PAAQ Total* is Total Scale, Parental Acceptance and Action Questionnaire; *PABUA Overprotection* is Overprotection Scale, Parental Attitudes, Beliefs and Understanding about Anxiety Scale; *CBCL School Internalizing* is Internalizing Scale, Child Behavior Checklist (CBCL) 6–18 years; *CBCL Preschool Internalizing* is Internalizing Scale, CBCL 3–5 years

Table 6 Themes identified in parent feedback regarding the impact of the mindful parenting program ($N = 10$)

Theme (n)[a]	Description of theme	Excerpt of parent feedback
Present-moment awareness (5)	Describes parents' increased awareness and understanding of their current experience and how this impacts their parenting	P2: *It has given me a chance to assess how I am feeling which [drives] my decisions* P6: *Allows me to understand my reaction to it [my child's anxiety]*
Intensity of emotional experience (5)	Captures parents' reports of less intense emotional experiences in parenting, and their increased understanding of these experiences	P1: *Less angry* P7: *You react with much less anxiety yourself* P11: *I see his anxiety as a normal but not a stressful issue*
Acceptance (7)	Parents' reported becoming more tolerant and accepting of difficult emotions and situations	P8: *They're the same emotions, but I'm trying to sit with them before reacting now* P10: *Felt not so overwhelmed about having to problem solve it [my child's anxiety]/her*
Self-regulation (6)	Describes parents' enhanced ability to consciously respond, rather than automatically react, to their child	P3: *Being able to take time and think before I respond to her reactions* P9: *More patience to help her work through anxiety, opens up new options*
Empathy (8)	Parents described having a broader perspective of their child, being more understanding of them and more able to empathize with them	P6: *Allowed me to reconnect with the bigger picture of my child's life, beyond the one issue* P8: *I've taken more time to really appreciate her* P10: *To become more empathetic about my child's feelings and understanding … while at times hard to understand, give her the space and time to explain them*
Self-compassion (2)	Parents reported feeling less isolated in dealing with their child's difficulties	P7: *I found that … we are not alone in the anxiety struggle* P11: *I'm less hard on myself when things don't go right*

[a]Number of parents whose comments identified the theme

pandemic negatively impacted their ability to benefit from the program, all still found the program to be of lasting value and would recommend it to others, suggesting that a mindful parenting program can be helpful even at times of heightened general stress.

Concerning preliminary effects, compared to waitlist, the intervention group reported large reductions in internalizing problems for their school-aged children (6–18 years). Existing studies have shown reduced internalizing problems in groups of children with externalizing problems or mixed diagnoses (Haydicky et al., 2015), so the present results suggest these reductions also occur for children with primary internalizing concerns. However, despite the preliminary evidence of treatment success at the group level, the low rates of reliable improvement at the individual level indicate that a substantial proportion of children did not benefit from their parents doing the program. This is consistent with findings from other studies, which typically show quite low rates of improvement with reliable change analyses, even for evidence-based child treatments (Smith & Jensen-Doss, 2017). For preschool-aged (3–5 years) children, the symptom reductions were negligible. Due to the dearth of research on the differential impacts of mindful parenting for children of particular developmental stages, it is unclear why the program appeared to benefit only the older group. One study of developmentally delayed preschool children found less internalizing problems after their parents attended a MBSR program (McGregor et al., 2020). The discrepancy between that study and the present one could be due to low baseline levels of internalizing problems in the present sample of preschool children, particularly compared to the higher rates for developmentally delayed children (Van Steensel et al., 2011), such that there was limited scope for improvement in the present sample. Alternatively, since none of the preschool children had reliably reduced internalizing symptoms at follow-up, it is possible that the program did not meet the needs of parents with younger children. Older children are generally more likely to be classified as improved under reliable change analyses, so more targeted programs may be needed for younger children (Smith & Jensen-Doss, 2017), including in mindful parenting programs.

There were moderate to large improvements in all facets of mindful parenting, and overall mindful parenting reliably improved in 70% of parents. This suggests the program was successful in its aim to develop parents' ability to broaden their attentional focus and acceptance regarding their child. There were also moderate to large reductions in parenting stress, parental experiential avoidance, maladaptive

cognitive emotion regulation and unhelpful beliefs regarding child anxiety, and a small increase in adaptive cognitive emotion regulation. These results provide tentative evidence that mindful parenting is at least as useful for parents concerned about child internalizing, as for those managing child externalizing, since the latter group of parents have typically reported only small to moderate reductions in parenting stress, psychopathology, and negative parenting style (Bögels et al., 2014). The results also suggest that improved parental emotion regulation may be one way in which mindful parenting can reduce child internalizing symptoms. By building parents' ability to tolerate difficult emotions, the program may help parents to model more helpful, active coping strategies for their child, instead of the avoidant coping behaviors that tend to maintain internalizing symptoms (Tiwari et al., 2008). Parental modelling of strategies predicts the child's use of strategies and the child's internalizing symptoms (Gunzenhauser et al., 2014; Wald et al., 2018).

This study went beyond showing general trait improvements. The weekly coping data showed that, even with pandemic-related uncertainty occurring throughout the program, parents felt less intensely stressed and were less experientially avoidant and more self-regulated, in specific, difficult parenting moments. The program therefore appears to help parents respond to their children in a more helpful manner, even at times of heightened stress when this might otherwise have been too difficult. This is particularly important in relation to parents of children with internalizing problems, since they are more likely to interpret situations in a threatening manner (Creswell et al., 2005) and to intervene in difficult situations, for example by physically or emotionally removing themselves or their child from the situation, which can contribute to or maintain child internalizing problems (McLeod et al., 2007; Tiwari et al., 2008). This could be explained by the program successfully broadening parents' attentional focus and acceptance regarding their child, so they become more receptive to experience (Bishop et al., 2004). This would allow for less threatening evaluations of particular situations, and therefore lowered stress appraisals (Weinstein et al., 2009) and less need for avoidant, overprotective, or other unhelpful parenting behavior (Tiwari et al., 2008).

Finally, based on the qualitative feedback, it appears likely that a mindful parenting program would be successful with parents of children with primary internalizing concerns. Parent feedback regarding how the program helped them to cope with their child's internalizing symptoms raised six themes that overlapped somewhat with the six facets of the IMP (de Bruin et al., 2014). The two most commonly identified themes were *acceptance* and *empathy*, which was similar to the acceptance and emotional awareness that we expected. Acceptance and the theme *self-compassion* together reflect the IMP facet Non-judgmental Acceptance of Parental Functioning (NJAPF), which captures a parent's ability to be accepting and compassionate regarding themself as a parent. The identification of the themes acceptance and self-compassion is consistent with evidence from earlier studies, which have found NJAPF to be the aspect of mindful parenting most predictive of child internalizing problems (Burgdorf & Szabó, 2021). The theme *empathy* encompasses the Emotional Awareness of the Child (EAC) and Compassion for the Child facets of the IMP. After NJAPF, EAC is the only other facet of mindful parenting that has been found to predict child internalizing problems (Burgdorf & Szabó, 2021). Lack of awareness regarding a child's anxiety could result in a parent failing to help the child manage that anxiety or managing it unhelpfully (Hurrell et al., 2017). Conversely, more aware or empathic parents can help reduce child anxiety, for example by providing an appropriate level of encouragement for their child to approach anxiety-inducing situations, allowing gradual exposures to such situations (Settipani & Kendall, 2017). Greater empathy may also reduce child internalizing by increasing the child's perception of parental warmth or support (Flory, 2004; Stern et al., 2015), which is longitudinally associated with reductions in child internalizing problems (Pinquart, 2017).

Parent feedback also raised themes of *present-moment awareness*, *intensity of emotional experience* (including less intense stress), and *self-regulation*. The intensity of emotional experience and self-regulation themes were similar to the Emotional Awareness of Self and Emotional Non-reactivity in Parenting IMP facets. Although some studies have found that parenting stress does not predict child internalizing (Burgdorf et al., 2019; Emerson et al., 2019), there may be an indirect link, through self-regulation. Stress makes it more difficult for parents to use appropriate strategies to regulate their own emotional state and behaviors (Crandall et al., 2015; Raio et al., 2013). As self-regulation influences how parents respond to a child's negative emotions, and the development of a child's own regulatory skills (Morris et al., 2017), it plays a crucial role in the child's well-being, including their level of anxiety (Morris et al., 2017; Wald et al., 2018). Accordingly, less stressed parents can better self-regulate, thus lowering their child's risk of anxiety. *Present-moment awareness* was similar to the IMP Listening with Full Attention facet (LFA), although unlike LFA, it related to the parents' attention for their own, rather than their child's, present experiences. A heightened awareness of their own experience and how it affects their parenting may also improve parental self-regulation, by allowing more conscious responding to the child, for example with more positive and less negative behaviors, which both predict lower child internalizing problems over time (Pinquart, 2017). Overall, the qualitatively identified themes support the quantitative data in

suggesting that mindful parenting may help reduce child internalizing symptoms by improving parents' ability to regulate themselves and by improving their emotional connection with their child.

Limitations and Future Research

There were several limitations related to assessment, in this study. The post-program internal consistencies and reliabilities for the CERQ Maladaptive and CBCL Internalizing (preschool) scales were relatively low. This could have impacted the accuracy of effects found for these two outcomes. Common method bias is also likely to have affected the effect estimates. For example, using parents as the sole respondents may have inflated effects due to the tendency to respond in a positive way or social desirability (Podsakoff et al., 2012). Parents invested significant time in the 8-week program, which may have led them to report greater improvements in the measured outcomes than actually occurred. Future studies could reduce the impact of this bias by including different respondents (Podsakoff et al., 2012), such as partners or children of participating parents, for example regarding the child's internalizing symptoms and their perceptions of any change in the participating parent. The qualitative data was collected from parents online, using a small number of open-ended questions. While the use of online questionnaires for collecting qualitative data is convenient for parents and can provide rich data (Braun et al., 2020), it is also possible that parents may have given less thought to their answers or provided less detail in this online format, than if they were interviewed by a researcher.

There were also limitations related to the sample. As we used a community-recruited sample, it is suggested that the study be replicated in a clinical sample, for example with parents of children with a diagnosed internalizing disorder. It is also important to note that the proportion of fathers participating in this study was very low (8%), with only 1 father participating in each group. Mothers report higher levels of mindful parenting than fathers (Moreira & Canavarro, 2015), and there is no evidence as to the structure of mindful parenting in fathers (Burgdorf & Szabó, 2021). The present results may therefore not be indicative of the outcomes for fathers, either due to differences between mothers and fathers in baseline levels, or in the structure, of mindful parenting. Similarly, the sample was homogenous in that it consisted largely of parents with a tertiary education, who identified culturally as "Australian". Replication of the study in different population groups is necessary, as parental engagement with parenting programs can be affected by factors including education, socio-economic status, and cultural values (Axford et al., 2012). Accordingly, although promising, the improvements in parent and child outcomes in this small feasibility sample must be regarded as preliminary, until replicated in a definitive trial of the program for this population of parents.

Author Contribution VB: designed the study, co-facilitated the program, collected and analyzed the data, and wrote and revised the manuscript. MA: reviewed the statistical analyses and each version of the manuscript. MS: reviewed and revised the study design, co-facilitated the program, and reviewed the statistical analyses and each version of the manuscript. All authors approved the final version of the manuscript for submission.

Funding The corresponding author is supported by a Research Training Program scholarship.

Declarations

Ethics Ethical approval (793/2019) was obtained from the Human Research Ethics Committee of The University of Sydney. Informed written consent was obtained from all participants in the study.

Conflict of Interest The authors declare no competing interests.

References

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA Preschool Forms & Profiles*. University of Vermont, Research Centre for Children, Youth, and Families.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA Preschool Forms & Profiles*. University of Vermont, Research Centre for Children, Youth, and Families.

Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., & Shaffer, S. (2005). The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant and Child Development, 14*, 133–154. https://doi.org/10.1002/icd.385

Axford, N., Lehtonen, M., Kaoukji, D., Tobin, K., & Berry, V. (2012). Engaging parents in parenting programs: Lessons from research and practice. *Children and Youth Services Review, 34*, 2061–2071. https://doi.org/10.1016/j.childyouth.2012.06.011

Baker, B. L., McIntyre, L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research, 47*, 217–230. https://doi.org/10.1046/j.1365-2788.2003.00484.x

Barroso, N. E., Mendez, L., Graziano, P. A., & Bagner, D. M. (2018). Parenting stress through the lens of different clinical groups: A systematic review & meta-analysis. *Journal of Abnormal Child Psychology, 46*, 449–461. https://doi.org/10.1007/s10802-017-0313-6

Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12*, 463–472. https://doi.org/10.1177/2F0265407595123009

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*, 230–241. https://doi.org/10.1093/clipsy/bph077

Bögels, S. M., Hellemans, J., van Deursen, S., Romer, M., & van der Meulen, R. (2014). Mindful parenting in mental health care: Effects on parental and child psychopathology, parental stress, parenting, coparenting and marital functioning. *Mindfulness, 5*, 536–551. https://doi.org/10.1007/s12671-013-0209-7

Bögels, S. M., Hoogstad, B., van Dun, L., de Schutter, S., & Restifo, K. (2008). Mindfulness training for adolescents with externalising disorders and their parents. *Behavioural and Cognitive Psychotherapy, 36*, 193–209. https://doi.org/10.1017/S1352465808004190

Bögels, S. M., & Restifo, K. (2013). *Mindful parenting in mental health care*. Springer.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. John Wiley.

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., Bakken, S., Kaplan, C. P., Squiers, L., Fabrizio, C., & Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine, 36*, 452–457. https://doi.org/10.1016/j.amepre.2009.02.002

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2020). The online survey as a *qualitative* research tool. *International Journal of Social Research Methodology*. https://doi.org/10.1080/13645579.2020.1805550

Burgdorf, V., & Szabó, M. (2021). The Interpersonal Mindfulness in Parenting Scale in mothers of children and infants: Factor structure and associations with child internalizing problems. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2020.633709

Burgdorf, V., Szabó, M., & Abbott, M. J. (2019). The effect of mindfulness interventions for parents on parenting stress and youth psychological outcomes: A systematic review and meta-analysis. *Frontiers in Psychology, 10*, 1336. https://doi.org/10.3389/fpsyg.2019.01336

Busch, A. M., Wagener, T. L., Gregor, K. L., Ring, K. T., & Borrelli, B. (2011). Utilizing reliable and clinically significant change criteria to assess for the development of depression during smoking cessation treatment: The importance of tracking idiographic change. *Journal of Addictive Behavior, 36*, 1228–1236. https://doi.org/10.1016/j.addbeh.2011.07.031

Campbell, K., Thoburn, J. W., & Leonard, H. D. (2017). The mediating effects of stress on the relationship between mindfulness and parental responsiveness. *Couple and Family Psychology: Research and Practice, 6*, 48–59. https://doi.org/10.1037/cfp0000075

Cheron, D. M., Ehrenreich, J. T., & Pincus, D. B. (2009). Assessment of parental experiential avoidance in a clinical sample of children with anxiety disorders. *Child Psychiatry and Human Development, 40*, 383–403. https://doi.org/10.1007/s10578-009-0135-z

Clarke-Stewart, K. A., Allhusen, V. D., McDowell, D. J., Thelen, L., & Call, J. D. (2003). Identifying psychological problems in young children: How do mothers compare with child psychiatrists? *Journal of Applied Developmental Psychology, 23*, 589–624. https://doi.org/10.1016/S0193-3973(03)00006-6

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. Routledge.

Costa, A. P., Steffgen, G., & Ferring, D. (2017). Contributors to well-being and stress in parents of children with autism spectrum disorder. *Research in Autism Spectrum Disorders, 37*, 61–72. https://doi.org/10.1016/j.rasd.2017.01.007

Costa, N. M., Weems, C. F., Pellerin, K., & Dalton, R. (2006). Parenting stress and childhood psychopathology: An examination of specificity to internalizing and externalizing symptoms. *Journal of Psychopathology and Behavioral Assessment, 28*, 113–122. https://doi.org/10.1007/s10862-006-7489-3

Crandall, A., Deater-Deckard, K., & Riley, A. W. (2015). Maternal emotion and cognitive control capacities and parenting: A conceptual framework. *Developmental Review, 36*, 105–126.

Creswell, C., Schniering, C. A., & Rapee, R. M. (2005). Threat interpretation in anxious children and their mothers: Comparison with nonclinical children and the effects of treatment. *Behaviour Research and Therapy, 43*, 1375–1381.

de Bruin, E. I., Zijlstra, B. J. H., Geurtzen, N., van Zundert, R. M. P., van de Weijer-Bergsma, E., Hartman, E. E., Nieuwesteeg, A. M., Duncan, L. G., & Bögels, S. M. (2014). Mindful parenting assessed further: Psychometric properties of the Dutch version of the Interpersonal Mindfulness in Parenting Scale (IMP). *Mindfulness, 5*, 200–212.

Drake, K. L., & Ginsburg, G. S. (2012). Family factors in the development, treatment, and prevention of childhood anxiety disorders. *Clinical Child and Family Psychology Review, 15*, 144–162. https://doi.org/10.1007/s10567-011-0109-0

Duncan, L. G. (2007). *Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting Scale* (Publication number: 3380731) [Doctoral dissertation, Pennsylvania State University]. ProQuest LLC.

Duncan, L. G., Coatsworth, J., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review, 12*, 255–270. https://doi.org/10.1007/s10567-009-0046-3

Edwards, S. L., Rapee, R. M., & Kennedy, S. (2010). Prediction of anxiety symptoms in preschool-aged children: Examination of maternal and paternal perspectives. *Journal of Child Psychology & Psychiatry, 51*, 313–321. https://doi.org/10.1111/j.1469-7610.2009.02160.x

Eldridge, S. M., Chan, C. L., Campbell, M. J., Bond, C. M., Hopewell, S., Thabane, L., Lancaster, G. A., on behalf of the PAFS consensus group. (2016). CONSORT 2010 statement: Extension to randomized pilot and feasibility trials. *British Medical Journal, 355*.https://doi.org/10.1136/bmj.i5239

Emerson, L. M., Aktar, E., de Bruin, E., Potharst, E., & Bögels, S. (2019). Mindful parenting in secondary child mental health: Key parenting predictors of treatment effects. *Mindfulness*. https://doi.org/10/1007/s12671-019-01176-w

Fernandes, D. V., Canavarro, M. C., & Moreira, H. (2020). The mediating role of parenting stress in the relationship between anxious and depressive symptomatology, mothers' perception of infant temperament, and mindful parenting during the postpartum period. *Mindfulness*. https://doi.org/10.1007/s12671-020-01327-4

Flory, V. (2004). A novel clinical intervention for severe childhood depression and anxiety. *Clinical Child Psychology and Psychiatry, 9*, 9–23. https://doi.org/10.1177/1359104504039167

Garnefski, N., & Kraaij, V. (2006). Cognitive Emotion Regulation Questionnaire - Development of a short 18-item version (CERQ-short). *Personality and Individual Differences, 41*, 1045–1053. https://doi.org/10.1016/j.paid.2006.04.010

Gunzenhauser, C., Fäsche, A., Friedlmeier, W., & von Suchodoletz, A. (2014). Face it or hide it: Parental socialization of reappraisal and response suppression. *Frontiers in Psychology, 4*, 1–14. https://doi.org/10.3389/fpsyg.2013.00992

Haydicky, J., Shecter, C., Wiener, J., & Ducharme, J. M. (2015). Evaluation of MBCT for adolescents with ADHD and their parents: Impact on individual and family functioning. *Journal of Child and Family Studies, 24*, 76–94. https://doi.org/10.1007/s10826-013-9815-1

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But…. *Communication Methods and Measures, 14*, 1–24. https://doi.org/10.1080/19312458.2020.1718629

Hurrell, K. E., Houwing, F. L., & Hudson, J. L. (2017). Parental meta-emotion philosophy and emotion coaching in families of children and adolescents with an anxiety disorder. *Journal of Abnormal Child Psychology, 45*, 569–582. https://doi.org/10.1007/s10802-016-0180-6

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12–19. https://doi.org/10.1037/0022-006X.59.1.12

Jones, L., Gold, E., Totsika, V., Hastings, R. P., Jones, M., Griffiths, A., & Silverton, S. (2018). A mindfulness parent well-being course: Evaluation of outcomes for parents of children with autism and related disabilities recruited through special schools. *European Journal of Special Needs Education, 33*, 16–30. https://doi.org/10.1080/08856257.2017.1297571

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., Lenderking, W. R., & Santorelli, S. F. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*, 936. https://doi.org/10.1176/ajp.149.7.936

Kabat-Zinn, J., & Kabat-Zinn, M. (1997). *Everyday blessings. The inner work of mindful parenting*. First Trade.

Kiel, E. J., Wagers, K. B., & Luebbe, A. M. (2019). The Attitudes About Parenting Strategies for Anxiety Scale: A measure of parenting attitudes about protective and intrusive behavior. *Assessment, 26*, 1504–1523. https://doi.org/10.1177/2F1073191117719513

Mann, J., Kuyken, W., O'Mahen, H., Ukoumunne, O. C., Evans, A., & Ford, T. (2016). Manual development and pilot randomised controlled trial of mindfulness-based cognitive therapy versus usual care for parents with a history of depression. *Mindfulness, 7*, 1024–1033. https://doi.org/10.1007/s12671-016-0543-7

McDonald, R. P. (1999). *Test theory: A unified treatment*. Lawrence Erlbaum.

McLeod, B. D., Weisz, J. R., & Wood, J. J. (2007). Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review, 27*, 986–1003. https://doi.org/10.1016/j.cpr.2007.03.001

McGregor, H. A., Sanner, C. M., & Neece, C. L. (2020). Effects of MBSR parent intervention on internalizing problems in children: ASD status as a moderator. *Journal of Mental Health Research in Intellectual Disabilities, 13*, 343–363. https://doi.org/10.1080/19315864.2020.1815913

Meppelink, R., de Bruin, E. I., Wanders-Mulder, F. H., Vennik, C. J., & Bögels, S. M. (2016). Mindful parenting training in child psychiatric settings: Heightened parental mindfulness reduces parents' and children's psychopathology. *Mindfulness, 7*, 680–689. https://doi.org/10.1007/s12671-016-0504-1

Moreira, H., & Canavarro, M. C. (2015). Individual and gender differences in mindful parenting: The role of attachment and caregiving representations. *Personality and Individual Differences, 87*, 13–19.

Morris, S. B. (2008). Estimating effect sizes from pretest-posttest-control group designs. *Organizational Research Methods, 11*, 364–386. https://doi.org/10.1177/1094428106291059

Morris, A. S., Criss, M. M., Silk, J. S., & Houltberg, B. J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Development Perspectives, 11*, 233–238. https://doi.org/10.1111/cdep.12238

Östberg, M., Hagekull, B., & Hagelin, E. (2007). Stability and prediction of parenting stress. *Infant and Child Development, 16*, 207–223. https://doi.org/10.1002/icd.516

Pinquart, M. (2017). Associations of parenting dimensions and styles with internalizing symptoms in children and adolescents: A meta-analysis. *Marriage & Family Review, 53*, 613–640. https://doi.org/10.1080/01494929.2016.1247761

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual research review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology & Psychiatry, 56*, 345–365. https://doi.org/10.1111/jcpp.12381

Potharst, E. S., Aktar, E., Rexwinkel, M., Rigterink, M., & Bögels, S. M. (2017). Mindful with your baby: Feasibility, acceptability and effects of a mindful parenting group training for mothers and their babies in a mental health context. *Mindfulness, 8*, 1236–1250. https://doi.org/10.1007/s12671-017-0699-9

Potharst, E. S., Baartmans, J. M. D., & Bögels, S. M. (2018). Mindful parenting training in a clinical versus non-clinical setting: An explorative study. *Mindfulness*. https://doi.org/10.1007/s12671-018-1021-1

Potharst, E. S., Zeegers, M., & Bögels, S. M. (2018). Mindful with your toddler group training: Feasibility, acceptability, and effects on subjective and objective measures. *Mindfulness*. https://doi.org/10.1007/s12671-018-1073-2

Racey, D. N., Fox, J., Berry, V. L., Blockley, K. V., Longridge, R. A., Simmons, J. L., Janssens, A., Kuyken, W., & Ford, T. J. (2017). Mindfulness-based cognitive therapy for young people and their carers: A mixed-method feasibility study. *Mindfulness*. https://doi.org/10.1007/s12671-017-0842-7

Raio, C. M., Orederu, T. A., Palazzolo, L., Shurick, A. A., & Phelps, E. A. (2013). Cognitive emotion regulation fails the stress test. *PNAS Proceedings of the National Academy of Sciences of the United States of America, 110*, 15139–15144. https://doi.org/10.1073/pnas.1305706110

Rapee, R.M. (2012). Anxiety disorders in children and adolescents: Nature, development, treatment and prevention. In J.M. Rey (Ed.), *IACAPAP e-Textbook of Child and Adolescent Mental Health*. Retrieved from https://iacapap.org/content/uploads/F.1-Anxiety-Disorders-2018-UPDATE.pdf

Robinson, M., & Neece, C. L. (2015). Marital satisfaction, parental stress, and child behavior problems among parents of young children with developmental delays. *Journal of Mental Health Research in Intellectual Disabilities, 8*, 23–46. https://doi.org/10.1080/19315864.2014.994247

Rodriguez, C. M. (2011). Association between independent reports of maternal parenting stress and children's internalizing symptomatology. *Journal of Child and Family Studies, 20*, 631–639. https://doi.org/10.1007/s10826-010-9438-8

Rousseau, S., & Scharf, M. (2017). Why people helicopter parent? An actor–partner interdependence study of maternal and paternal prevention/promotion focus and interpersonal/self-regret. *Journal of Social and Personal Relationships, 35*, 919–935. https://doi.org/10.1177/0265407517700514

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2013). *Mindfulness-based cognitive therapy for depression* (2nd ed.). The Guilford Press.

Settipani, C. A., & Kendall, P. A. (2017). The effect of child distress on accommodation of anxiety: Relations with maternal beliefs, empathy, and anxiety. *Journal of Clinical Child & Adolescent Psychology, 46*, 810–823. https://doi.org/10.1080/15374416.2015.1094741

Skreden, M., Skari, H., Malt, U. F., Pripp, A. H., Björk, M. D., Faugli, A., & Emblem, R. (2012). Parenting stress and emotional wellbeing in mothers and fathers of preschool children. *Scandinavian Journal of Public Health, 40*, 596–604. https://doi.org/10.1177/1403494812460367

Smith, A. M., & Jensen-Doss, A. (2017). Youth psychotherapy outcomes in usual care and predictors of outcome group membership. *Psychological Services, 14*, 66–76. https://doi.org/10.1037/ser0000115

Stern, J. A., Borelli, J. L., & Smiley, P. A. (2015). Assessing parental empathy: A role for empathy in child attachment. *Attachment and Human Development, 17*, 1–22. https://doi.org/10.1080/14616734.2014.969749

Stone, L. L., Mares, S. H. W., Otten, R., Engels, R. C. M. E., & Janssens, J. M. A. M. (2016). The co-development of parenting stress and childhood internalizing and externalizing problems. *Journal of Psychopathology and Behavioral Assessment, 38*, 76–86. https://doi.org/10.1007/s10862-015-9500-3

Suveg, C., Shaffer, A., Morelen, D., & Thomassin, K. (2011). Links between maternal and child psychopathology symptoms: Mediation through child emotion regulation and moderation through maternal behavior. *Child Psychiatry and Human Development, 42*, 507–520. https://doi.org/10.1007/s10578-011-0223-8

Swan, A. J., & Kendall, P. C. (2016). Fear and missing out: Youth anxiety and functional outcomes. *Clinical Psychology Science and Practice, 23*, 417–435. https://doi.org/10.1111/cpsp.12169

Tiwari, S., Podell, J. C., Martin, E. D., Mychailyszyn, M. P., Furr, J. M., & Kendall, P. C. (2008). Experiential avoidance in the parenting of anxious youth: Theory, research, and future directions. *Cognition and Emotion, 22*, 480–496. https://doi.org/10.1080/02699930801886599

Van Steensel, F. J., Bögels, S. M., & Perrin, S. (2011). Anxiety disorders in children and adolescents with autistic spectrum disorders: A meta-analysis. *Clinical Child and Family Psychology Review, 14*, 302–17. https://doi.org/10.1007/s10567-011-0097-0

Venta, A., Velez, L., & Lau, J. (2016). The role of parental depressive symptoms in predicting dysfunctional discipline among parents at high-risk for child maltreatment. *Journal of Child and Family Studies, 25*, 3076–3082. https://doi.org/10.1007/s10826-016-0473-y

Wald, N., Carthy, T., Shenaar-Golan, V., Tadmor-Zisman, Y., & Ziskind, M. (2018). Influence of maternal negative emotion reactivity and cognitive reappraisal on child anxiety disorder. *Depression and Anxiety, 35*, 353–359. https://doi.org/10.1002/da.22745

Weinstein, N., Brown, K. W., & Ryan, R. M. (2009). A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *Journal of Research in Personality, 43*, 374–385. https://doi.org/10.1016/j.jrp.2008.12.008

Whitaker, C., Stevelink, S., & Fear, N. (2017). The use of Facebook in recruiting participants for health research purposes: A systematic review. *Journal of Medical Internet Research, 19*, e290. https://doi.org/10.2196/jmir.7071

Whitehead, A. L., Julious, S. A., Cooper, C. L., & Campbell, M. J. (2016). Estimating the sample size for a pilot randomised trial to minimise the overall trial sample size for the external pilot and main trial for a continuous outcome variable. *Statistical Methods in Medical Research, 25*, 1057–1073. https://doi.org/10.1177/0962280215588241

Willner, C. J., Gatze-Kopp, L. M., & Bray, B. C. (2016). The dynamics of internalizing and externalizing comorbidity across the early school years. *Developmental Psychopathology, 28*, 1033–1052. https://doi.org/10.1017/S0954579416000687

Wolk, C. B., Caporino, N. E., McQuarrie, S., Settipani, C. A., Podell, J. L., Crawley, S., Beidas, R. S., & Kendall, P. C. (2016). Parental Attitudes, Beliefs, and Understanding of Anxiety (PABUA): Development and psychometric properties of a measure. *Journal of Anxiety Disorders, 39*, 71–78. https://doi.org/10.1016/j.janxdis.2016.03.001

Yap, M. B. H., Pilkington, P. D., Ryan, S. M., & Jorm, A. F. (2014). Parental factors associated with childhood anxiety, depression and internalizing problems: A systematic review and meta-analysis. *Journal of Affective Disorders, 175*, 424–440. https://doi.org/10.1016/j.jad.2015.01.050

Zahra, D., & Hedge, C. (2010). The Reliable Change Index: Why isn't it more popular in academic psychology? *PsyPAG Quarterly, 76*, 14–19.

Appendix D2

THE UNIVERSITY OF SYDNEY

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Thursday, 28 November 2019

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

The University of Sydney Human Research Ethics Committee (HREC) has considered your application.

I am pleased to inform you that after consideration of your response, your project has been approved.

Details of the approval are as follows:

Project No.:	**2019/793**
Project Title:	**Mindful parenting and child emotional well-being**
Authorised Personnel:	**Szabo Marianna; Burgdorf Virginia;**
Approval Period:	**28 November 2019 to 28 November 2023**
First Annual Report Due:	**28 November 2020**

Documents Approved:

Date Uploaded	Version Number	Document Name
05/11/2019	Version 2	Study Flyer - revised
05/11/2019	Version 2	PIS - revised
05/11/2019	Version 1	CBCL questionnaire
05/11/2019	Version 1	PAAQ
05/11/2019	Version 2	PCF - revised
13/09/2019	Version 1	Appendix E - Intake/Orientation
13/09/2019	Version 1	Appendix F - Demographics Questionnaire
13/09/2019	Version 1	Appendix G - IMP
13/09/2019	Version 1	Appendix H - DASS21
13/09/2019	Version 1	Appendix I - CERQ
13/09/2019	Version 1	Appendix J - PABUA
13/09/2019	Version 1	Appendix B - EOI page
13/09/2019	Version 1	Appendix L - PAS
13/09/2019	Version 1	Appendix O - Feedback questionnaire

Special Condition/s of Approval

Thank you for submitting documents with tracked changes. Please submit final versions of the PIS and PCF with all changes accepted.

Regarding the additional modifications requested:

- It is noted that only some of the CBCL questions are relevant to the study. Please submit a document or link to online survey with only those CBCL questions which will be delivered to participants, so that the approved documents in IRMA refect the questions which will be asked.

Condition/s of Approval

- Research must be conducted according to the approved proposal.
- An annual progress report must be submitted to the Ethics Office on or before the anniversary of approval and on completion of the project.
- You must report as soon as practicable anything that might warrant review of ethical approval of the project including:
  - Serious or unexpected adverse events (which should be reported within 72 hours).
  - Unforeseen events that might affect continued ethical acceptability of the project.
- Any changes to the proposal must be approved prior to their implementation (except where an amendment is undertaken to eliminate *immediate* risk to participants).
- Personnel working on this project must be sufficiently qualified by education, training and experience for their role, or adequately supervised. Changes to personnel must be reported and approved.
- Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, as relevant to this project.
- Data and primary materials must be retained and stored in accordance with the relevant legislation and University guidelines.
- Ethics approval is dependent upon ongoing compliance of the research with the *National Statement on Ethical Conduct in Human Research*, the *Australian Code for the Responsible Conduct of Research*, applicable legal requirements, and with University policies, procedures and governance requirements.
- The Ethics Office may conduct audits on approved projects.
- The Chief Investigator has ultimate responsibility for the conduct of the research and is responsible for ensuring all others involved will conduct the research in accordance with the above.

This letter constitutes ethical approval only.

Please contact the Ethics Office should you require further information or clarification.

Sincerely,

Glen Davis
E

Professor Glen Davis
Chair
Human Research Ethics Committee (HREC 2)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

THE UNIVERSITY OF SYDNEY

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Tuesday, 17 March 2020

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

Your request to modify this project, which was submitted on 16 March 2020, has been considered.

This project has been approved to proceed with the proposed amendments.

Protocol Number: **2019/793**
Protocol Title: **Mindful parenting and child emotional well-being**

Approved:

- *meetings held via the university Zoom platform instead of in-person*

Please contact the ethics office should you require further information.

Sincerely,

Dr Clifton Chan
Chair, Modification Review Committee (MRC 3)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

Friday, 3 April 2020

Dr Marianna Szabo
Psychology; Faculty of Science
Email: marianna.szabo@sydney.edu.au

Dear Marianna,

Your request to modify this project, which was submitted on 31 March 2020, has been considered.

After consideration of your response to the comments raised, this project has been approved toproceed with the proposed amendments.

Protocol Number: 2019/793

Protocol Title: Mindful parenting and child emotional well-being

Documents Approved:

Date Uploaded	Version Number	Document Name
03/04/2020	Version 3	Updated Participant Feedback Questionnaire

Please contact the ethics office should you require further information.

Sincerely,

Dr Clifton Chan
Modification Review Committee (MRC 3)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007) and the NHMRC's Australian Code for the Responsible Conduct of Research (2007)

Learn how to bring mindfulness to your parenting

Research study: Mindful parenting and children's emotional well-being

- We are running a mindful parenting program
- Run by qualified facilitators over 8 weeks, with one 2-hour session per week
- We will ask you to complete online questionnaires before, during and after the program to measure its effects
- This study will investigate whether the program improves child emotional well-being, by assisting parents to manage their own emotions, beliefs and behaviours

Who can participate?

We are looking for parents:

- with a child aged 3-18 years
- who are concerned their child tends to worry, or be sad, sensitive, anxious, nervous or shy
- who are not currently engaging in other psychotherapy
- who do not suffer from serious mental health conditions such as a psychotic or bipolar disorder or substance dependence

Interested in participating? Register your interest at: https://sydney.au1.qualtrics.com/jfe/form/SV_6fMmLjGLuH09dOZ or contact the researcher on virginia.burgdorf@sydney.edu.au or 0458 638 728.

THE UNIVERSITY OF SYDNEY

This study has been approved by Human Ethics Research Committee, approval no. 2019/793. Chief Investigator: Dr Marianna Szabo, Room 417 Brennan MacCallum Building, The University of Sydney. Email: marianna.szabo@sydney.edu.au

Version 2, 5/11/19

THE UNIVERSITY OF SYDNEY

School of Psychology
Faculty of Science

ABN 15 211 513 464

Dr Marianna Szabo
Senior Lecturer
School of Psychology

Room 417
Brennan MacCallum Building (A18)
The University of Sydney
NSW 2006 AUSTRALIA
Telephone: +61 2 9351 5147
Email: marianna.szabo@sydney.edu.au
Web: http://www.sydney.edu.au/

Mindful parenting and child emotional well-being

PARTICIPANT INFORMATION STATEMENT

(1) What is this study about?

You are invited to take part in a research study about mindful parenting and children's emotional well-being. Mindful parenting programs benefit parents by reducing parenting stress (Bögels, Hellemans, van Deursen, Romer, & van der Meulen 2014). They also benefit children in numerous ways, including by reducing behavioural and emotional problems (Bögels et al. 2014). Most mindful parenting programs are designed for parents whose children have significant behavioural problems (Burgdorf, Szabo, & Abbott, 2019). This study will test an 8-week mindful parenting program modified for parents who are concerned that their child may have emotional problems, such as a tendency to worry, or be sensitive, nervous, anxious or shy. The study will investigate (1) the feasibility of the program, as a way to improve child emotional well-being by assisting parents to manage their own emotions and anxiety-related beliefs and behaviours; and (2) the acceptability of the program to parents.

You have been invited to participate in this study because you are the parent (or in the role of parent) of a child aged between 3 and 18 years. This Participant Information Statement tells you about the research study, so you can decide if you want to take part.

(2) Who is running the study?

The study is being carried out by Gini Burgdorf as part of the degree of Doctor of Philosophy at The University of Sydney. This will take place under the supervision of Dr Marianna Szabo (Senior Lecturer, The University of Sydney).

(3) What will the study involve for me?

Mindful parenting groups will be run by the researchers at The University of Sydney, Camperdown. Each group will have between 8 and 15 parents in it. Children do not attend the groups. Each group runs for 8 weeks, with one 2-hour session per week. Groups will be run during school terms.

If you are eligible to participate in this study, we will randomly assign you to either a mindful parenting group or a waitlist control group. If you are allocated to a mindful parenting group, you will be offered a place in the 8-week mindful parenting program and you will be asked to complete a set of online questionnaires, on 4 occasions: (1) in the week before the program, (2) after the 4th session of the program, (3) immediately after the program, and (4) 2 months after the program.

If you are allocated to a waitlist group, you will receive the same questionnaires at the same times as the parents allocated to the mindful parenting group. You will also be offered a place in the same mindful parenting program, but the program will be run after completion of the final set of questionnaires (in the next school term). This means that waitlist group participants complete their questionnaires **before** they attend the program. Having half the parents answer their questionnaires before the course and half answer them after the course allows us to compare outcomes for parents who have done the course with those who have not.

During the course, video-recordings will be made of the researchers (not the parents), so they can obtain supervision and ensure they are delivering the course effectively to parents.

(4) How much of my time will the study take?

The mindful parenting program runs for 8 weeks, with one 2-hour session per week. You will be asked to complete the questionnaires 4 times; they will take about 30 minutes to complete each time (you can do this online, at a time that is convenient).

(5) Who can take part in the study?

You may take part in the study if you are a parent (or in the role of parent) to a child aged between 3 and 18 years, if:

- you have adequate mastery of the English language: the course will be conducted in English and all questionnaires are in English;
- you are not currently engaging in another psychological therapy aimed at managing anxiety or parenting or child difficulties: this allows us to rule out the possibility that a course other than the mindful parenting course is contributing to any changes in measured outcomes;
- you do not have organic brain damage: the course content and format and questionnaires are not suitable for individuals with a cognitive impairment or intellectual disorder;
- you are not experiencing a current episode of psychosis or bipolar disorder, and do not have a history of psychosis or a psychotic disorder, or bipolar disorder: the course is not designed to target mechanisms underlying these conditions;
- you do not have any current or recent (within last 12 months) substance dependence: the course is not tailored specifically to meet the needs of individuals with substance use difficulties;
- you do not have significant interpersonal difficulties (such as anti-social behaviour): individuals with such difficulties are likely to find it hard to engage in the group-format program. This may also adversely affect overall group functioning;
- you are not at current, moderate to high risk of self-harm or suicide: in a group course, the facilitators are unable to provide the individual care required for an individual at this risk;
- there are no current safeguarding concerns about any children in the family: in a group course, the facilitators cannot provide the level of individual family support required if there are safety concerns regarding any child;
- your child does not have an intellectual disability: the program is not tailored to meet the needs of parents with a child with an intellectual disability.

(6) Do I have to be in the study? Can I withdraw from the study once I've started?

Being in this study is voluntary. Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the University of Sydney.

If you decide to participate and then change your mind later, you are free to withdraw at any time. You can do this by notifying the researcher at virginia.burgdorf@sydney.edu.au. If you withdraw from the study, we will not collect any more information from you. We will ask you whether you want us to delete the information that we have already collected from you or whether we may keep that information and include it in the aggregated study results.

If at any point during your attendance at a mindful parenting course the researchers form the opinion that your behaviour is jeopardising the physical or emotional safety of anyone in the group or disrupting the cohesiveness of the group, the researchers may ask you to leave the group.

(7) Are there any risks or costs associated with being in the study?

Throughout the mindful parenting program, group members will be invited to engage in short, guided mindfulness exercises. During these exercises, it is possible that you will feel emotional discomfort if asked to pay attention to an aspect of your psychological state, such as your thoughts or emotions. It is also possible that you will feel physical discomfort if asked to pay attention to a part of your body that is injured or tense. However, throughout the course, you will be free to participate to the extent that you feel able to. After each mindfulness exercise, the researchers will invite group members to share their experiences of that exercise, whether positive or negative, to help group members normalise their experience, gain insight into potentially unhelpful patterns of thinking, feeling and reacting and to develop self-compassion. While we do not expect participants to suffer any substantial distress, there will be an opportunity at the end of every session to discuss any concerns privately with the researchers.

Apart from taking up your time to complete the program and questionnaires, we do not expect that there will be any other risks or costs associated with this study.

(8) What happens if I suffer injury or complications as a result of the study?

We do not expect injuries or complications to result from this study. However, if you do suffer any injuries or complications, you should contact your doctor as soon as possible. You may have a right to take legal action to obtain compensation for any injuries or complications resulting from the study. Compensation may be available if your injury or complication is caused by the negligence of any of the parties involved in the study. If you receive compensation that includes an amount for medical expenses, you will be required to pay for your medical treatment from those compensation monies.

If you are not eligible for compensation for your injury or complication under the law, but are eligible for Medicare, then you can receive any medical treatment required for your injury or complication free of charge as a public patient in any Australian public hospital.

(9) Are there any benefits associated with being in the study?

Following the completion of the 8-week program and all questionnaires, you will receive a gift card worth $25 to thank you for your participation in this study. Attending the mindful parenting program may also benefit you by giving you skills to manage any parenting stress that you experience and to change the way in which you relate to your thoughts and emotions, particularly about your child/children.

Your participation in this study may also benefit other families in the future, by helping researchers to understand whether mindful parenting programs can improve child emotional well-being by assisting parents to manage their own emotions and anxiety-related beliefs and behaviours.

(10) What will happen to information about me that is collected during the study?

By providing your consent, you are agreeing to us collecting personal information about you for the purposes of this research study. This information will only be used for the purposes outlined in this Participant Information Statement.

- The types of information to be collected from you will be about demographics, your parenting style, typical emotion regulation strategies and anxiety-related beliefs and behaviours, your child's emotional well-being, and the acceptability of the mindful parenting program.
- This information will be collected through online questionnaires, hosted on Qualtrics. Qualtrics meets strict security requirements.
- During the study, the collected information will be stored in a file accessible only by the researchers, on a secure server maintained by The University of Sydney.
- Your identity and information will be kept strictly confidential, except as required by law.
- After completion of the study, all data will be "de-identified", so that it cannot be linked to you in any way. This non-identifiable information will be stored for 20 years (as required by law) in the University's secure Research Data Store and will then be destroyed.
- The findings of this study may be published in the researcher's doctoral thesis, or used by the researchers alone or with collaborating researchers to write scientific papers or conference presentations. The data may also be used in future scientific research. Only non-identifiable information will be used for these purposes (no participant will be individually identifiable and the reported results will be based on aggregated participant data).

(11) What will happen when the study is finished?

If you are interested in attending other mindfulness or parenting courses after the mindful parenting program ends in this study, the researchers can provide you with some suggestions.

(12) Can I tell other people about the study?

Yes.

(13) What if I would like further information about the study?

If you would like to know more at any stage of the study, please feel free to contact the researcher at virginia.burgdorf@sydney.edu.au.

(14) Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can tell us that you wish to receive feedback on the Consent Form that follows this information statement. The feedback will be in the form of a summary of the overall findings of the research, which will be emailed to participants after the study is finished.

(15) What if I have a complaint or any concerns about the study?

Research involving humans in Australia is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this study have been approved by the HREC

of the University of Sydney (protocol number 2019/793). As part of this process, we have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007).* This statement has been developed to protect people who agree to take part in research studies.

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and protocol number.

The Manager, Ethics Administration, University of Sydney:

- **Telephone:** +61 2 8627 8176
- **Email:** human.ethics@sydney.edu.au
- **Fax:** +61 2 8627 8177 (Facsimile)

PARTICIPANT CONSENT FORM

I confirm that I wish to participate in this study, on the terms set out in the Participant Information Statement.

In giving my consent I confirm that:

- ✓ I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.
- ✓ I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.
- ✓ The researchers have answered any questions that I had about the study and I am happy with the answers.
- ✓ I understand that being in this study is voluntary. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of Sydney.
- ✓ I understand that I can withdraw from the study at any time.
- ✓ I understand that the personal information that is collected about me will be stored securely and will only be used as outlined in the Participant Information Statement or as required by law.
- ✓ I understand that the results of this study may be published, and that publications will not contain my name or any identifiable information about me.

_____ _____

Print name Sign name

APPENDIX D5

Demographics Questionnaire

1. Do you consider yourself to be the primary caregiver for the children in your family?
    a. Yes
    b. No
    c. I share the caregiving role equally with another family member

2. What is your age (in years): [*select from pull down menu*]

3. In which country is your primary residence? [*select from pull-down menu*]

4. Please choose the cultural background that you most closely identify with:
    a. Australian
    b. Australian Aboriginal, Torres Strait Islander or South Sea Islander
    c. New Zealander
    d. British or Irish
    e. Western European
    f. Northern European
    g. Southern European
    h. Eastern European
    i. South-East Asian
    j. North-East Asian
    k. Southern or Central Asian
    l. Middle Eastern
    m. North American
    n. South American or Central American
    o. North African
    p. Sub-Saharan African
    q. Other (please specify)

5. What is the highest level of education you have completed?
    a. Post-graduate degree (Master's degree or doctoral degree)
    b. Bachelor's degree (including an Honours-level degree)
    c. Associate's degree
    d. Vocational training (Certificate I, II, III or IV)
    e. High school or secondary school (Year 12 or equivalent) or less
    f. Other

6. How many children are in your family:
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5 or more
7. Have you ever been diagnosed with a mental health condition?

a. Yes
b. No

8. Have you ever engaged in the formal practice of mindfulness (or other form of meditation or contemplative practice)?

    a. No formal practice
    b. Mindfulness
    c. Yoga
    d. Tai chi
    e. Other (please specify)

9. [*Display this question only if "No formal practice" is not selected in Q8*] For approximately how long have you engaged in formal practice?

    a. Less than 3 months
    b. 3 to 6 months
    c. 6 months to 1 year
    d. 1 to 5 years
    e. 5 to 10 years
    f. More than 10 years

10. [*Display this question only if "No formal practice" is not selected in Q8*] How frequently are you currently engaging in formal practice of mindfulness (or other form of meditation or contemplative practice)?

    a. Once or more a day
    b. 3 or more times a week
    c. 1 to 2 times a week
    d. Once a fortnight
    e. Once a month
    f. Less than once a month
    g. Not currently practicing

For the following questions about parenting practices, please choose one child aged 2-18 years in your family, and answer the questions about your parenting of that child:

11. What is your relationship to the child about whom you will answer the parenting questions?

    a. Biological mother
    b. Biological father
    c. Adoptive mother
    d. Adoptive father
    e. Stepmother
    f. Stepfather
    g. Foster mother
    h. Foster father
    i. Grandmother
    j. Grandfather
    k. Other (please specify)

12. What is the gender of the child about whom you will answer the parenting questions?

    a. Male
    b. Female
    c. Other (please specify)

13. What is the age of the child about whom you will answer the parenting questions? [*select from pull-down menu*]

Interpersonal Mindfulness in Parenting Scale

The following statements describe different ways that parents interact with their children on a daily basis. Please select whether you think the statement is "Never True", "Rarely True", "Sometimes True", "Often True" or "Always True" for you.

Remember there are no right or wrong answers. Please answer according to what ***really*** reflects your experience rather than what you think your experience *should* be. Please treat each statement separately from every other statement.

	Never True	Rarely True	Sometimes True	Often True	Always True
1. I find myself listening to my child with one ear because I am busy doing or thinking about something else at the same time.	1	2	3	4	5
2. When I'm upset with my child, I notice how I am feeling before I take action.	1	2	3	4	5
3. I notice how changes in my child's mood affect my mood.	1	2	3	4	5
4. I listen carefully to my child's ideas, even when I disagree with them.	1	2	3	4	5
5. I often react too quickly to what my child says or does.	1	2	3	4	5
6. I am aware of how my moods affect the way I treat my child.	1	2	3	4	5
7. Even when it makes me uncomfortable, I allow my child to express his/her feelings.	1	2	3	4	5
8. When I am upset with my child, I calmly tell him/her how I am feeling.	1	2	3	4	5
9. I rush through activities with my child without really being attentive to him/her.	1	2	3	4	5
10. I have difficulty accepting my child's growing independence.	1	2	3	4	5
11. How I am feeling tends to affect my parenting decisions, but I do not realise it until later.	1	2	3	4	5
12. It is hard for me to tell what my child is feeling.	1	2	3	4	5
13. When I am doing things with my child, my mind wanders off and I am easily distracted.	1	2	3	4	5
14. When my child misbehaves, it makes me so upset I say or do things I later regret.	1	2	3	4	5
15. I tend to be hard on myself when I make mistakes as a parent.	1	2	3	4	5

16. When my child does something that upsets me, I try to keep my emotions in balance.	1	2	3	4	5
17. When times are really difficult with my child, I tend to blame myself.	1	2	3	4	5
18. When things I try to do as a parent do not work out, I can accept them and move on.	1	2	3	4	5
19. I am often so busy thinking about other things that I realise I am not really listening to my child.	1	2	3	4	5
20. When I do something as a parent that I regret, I try to give myself a break.	1	2	3	4	5
21. In difficult situations with my child, I pause without immediately reacting.	1	2	3	4	5
22. It is easy for me to tell when my child is worried about something.	1	2	3	4	5
23. I tend to criticize myself for not being the kind of parent I want to be.	1	2	3	4	5
24. I pay close attention to my child when we are spending time together.	1	2	3	4	5
25. I am kind to my child when he/she is upset.	1	2	3	4	5
26. When I am having a hard time with parenting, I feel like other parents must have an easier time of it.	1	2	3	4	5
27. When my child is going through a difficult time, I try to give him/her the nurturing and caring he/she needs.	1	2	3	4	5
28. I try to understand my child's point of view, even when his/her opinions do not makes sense to me.	1	2	3	4	5
29. When something my child does upsets me, I get carried away with my feelings.	1	2	3	4	5
30. I can tell what my child is feeling even if he/she does not say anything.	1	2	3	4	5
31. I try to be understanding and patient with my child when he/she is having a hard time.	1	2	3	4	5

Duncan, L. G. (2007). Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting scale. [doctoral dissertation]. Pennsylvania State University.

Duncan, L. G., Coatsworth, J., & Greenberg, M. T. (2009). A model of mindful parenting: Implications for parent-child relationships and prevention research. *Clinical Child and Family Psychology Review, 12*, 255-270. doi:10.1007/s10567-009-0046-3

v.1

Parenting Stress Scale

The following statements describe feelings and perceptions about the experience of being a parent. Indicate the degree to which you agree or disagree with the statements below by thinking about how your relationship with your child or children typically is.

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

1	I am happy in my role as a parent	
2	There is little or nothing I wouldn't do for my child(ren) if it was necessary.	
3	Caring for my child(ren) sometimes takes more time and energy than I have to give.	
4	I sometimes worry whether I am doing enough for my child(ren).	
5	I feel close to my child(ren).	
6	I enjoy spending time with my child(ren).	
7	My child(ren) is an important source of affection for me.	
8	Having child(ren) gives me a more certain and optimistic view for the future.	
9	The major source of stress in my life is my child(ren).	
10	Having child(ren) leaves little time and flexibility in my life.	
11	Having child(ren) has been a financial burden.	
12	It is difficult to balance different responsibilities because of my child(ren).	
13	The behaviour of my child(ren) is often embarrassing or stressful to me.	
14	If I had it to do over again, I might decide not to have child(ren).	
15	I feel overwhelmed by the responsibility of being a parent.	
16	Having child(ren) has meant having too few choices and too little control over my life.	
17	I am satisfied as a parent	
18	I find my child(ren) enjoyable	

Berry, J.D., & Jones, W.H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12*, 463 – 472.

Cognitive Emotion Regulation Questionnaire--Short Form

Everyone gets confronted with negative or unpleasant experiences and everyone responds to them in his or her own way. Choose the most suitable response to the following statements, to indicate what you **generally** think, **when you experience negative or unpleasant events**.

1 = Never or almost never
2 = Sometimes
3 = Regularly
4 = Often
5 = Always or almost always

Self-blame

I feel that I am the one who is responsible for what has happened

I think that basically the cause must lie within myself

Acceptance

I think that I have to accept that this has happened

I think that I have to accept the situation

Focus on thought/rumination

I often think about how I feel about what I have experienced

I am preoccupied with what I think and feel about what I have experienced

Positive refocusing

I think of pleasant things that have nothing to do with it

I think of something nice instead of what has happened

Refocus on planning

I think about how to change the situation

I think about a plan of what I can do best

Positive reappraisal

I think I can learn something from the situation

I think that I can become a stronger person as a result of what has happened

Garnefski, N., & Kraaij, V. (2006). Cognitive emotion regulation questionnaire – development of a short 18-item version (CERQ-short). *Personality and Individual Differences, 41*, 1045-1053. doi.org/10.1016/j.paid.2006.04.010

Parental Acceptance and Action Questionnaire

Thinking about the child you are answering about, please rate the degree to which the following statements are true about you.

1 = Never true	2 = Very rarely true	3 = Seldom true	4 = Sometimes true	5 = Frequently true	6 = Almost always true	7 = Always true

Inaction

1. I am able to take action about my child's fears, worries, and feelings even if I am uncertain what the right thing is to do.
2. When I feel depressed or anxious, I am unable to help my child manage their fears, worries, or feelings.
3. I try to suppress thoughts and feelings about my child that I don't like, by just not thinking about them.
4. In order for my child to do something important, I have to have all my doubts about it worked out.
5. I'm not afraid of my child's feelings.
6. Despite my doubts, I feel as though I can set a plan for managing my child's feelings.
7. If I get frustrated with my child, then I can still help him or her.
8. I often catch myself daydreaming about things I've done with my child and what I would do differently next time.
9. When I compare myself to other parents, it seems that most of them are handling their lives better than I do.

Unwillingness

10. It's okay for my child to feel depressed or anxious.
11. I rarely worry about getting my child's anxieties, worries, and feelings under control.
12. I try hard to avoid having my child feel depressed or anxious.
13. It is bad if my child feels anxious.
14. If I could magically remove all the painful experiences my child has had in his or her life, I would do so.
15. Worries can get in the way of my child's success.

Cheron, D. M., Ehrenreich, J. T., & Pincus, D. B. (2009). Assessment of Parental Experiential Avoidance in a Clinical Sample of Children with Anxiety Disorders. *Child Psychiatry and Human Development*, 40, 383-403. doi: 10.1007/s10578-009-0135-z

v.1

Parent Attitudes, Beliefs, and Understanding about Anxiety (PABUA)

These questions relate to your attitudes and beliefs about your child when he/she is feeling **nervous** or **anxious**.Please indicate the degree to which you agree with each of the following items using the scale below. There areno right or wrong answers. Simply circle your response to each item.

1	2	3	4	5
Strongly disagree	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Strongly agree

1	My child's anxiety will decrease if he/she avoids what makes him/her anxious	1	2	3	4	5
2	My child should be excused from activities that make him/her nervous	1	2	3	4	5
3	A good parent will not push his/her child to do things that makes him/her nervous.	1	2	3	4	5
4	A way to help my child feel less anxious is to encourage him/her to face his/her fears	1	2	3	4	5
5	Anxious children are sensitive and need to be protected	1	2	3	4	5
6	If my child had different parents perhaps he/she would not be so anxious	1	2	3	4	5
7	As a parent I am very limited in how much I can help my child with his/her anxiety	1	2	3	4	5
8	It is hard for me to be with my child when he/she is nervous	1	2	3	4	5
9	I feel uncertain about how to help my child when he/she is anxious.	1	2	3	4	5
10	My child is my best friend	1	2	3	4	5
11	It is important that other people in my child's life (e.g., teachers) do not push him/her to do things that make him/her nervous	1	2	3	4	5
12	A good parent allows their child to have freedom and experience things on their own	1	2	3	4	5
13	I feel uncomfortable when my child feels anxious	1	2	3	4	5
14	It is important that I keep my child safe from his /her worries	1	2	3	4	5
15	My child should not be worried	1	2	3	4	5
16	Children can learn a great deal from their mistakes	1	2	3	4	5
17	It is important that I protect my child from feeling anxious	1	2	3	4	5
18	My child will be traumatized if I push him/her to do something that makes hm/her nervous	1	2	3	4	5
19	If my child is forced to face his/her anxiety it will make it worse	1	2	3	4	5
20	I try not to think about my child's anxiety	1	2	3	4	5
21	It is important for children to see adults cope with anxiety	1	2	3	4	5

Podell, J.L., Benjamin, C.L., Beidas, R.S., Crawley, S., & Kendall, P.C. (2009). Parent Attitudes and Beliefs about Anxiety (PABA). Unpublishedmeasure.

Wolk, C.B., Caporino, N.E., McQuarrie, S., Settipani, C.A., Podell, J.L., Crawley, S., Beidas, R.S., & Kendall, P.C. (2016). Parental Attitudes, Beliefs, and Understanding of Anxiety (PABUA): Development and psychometric properties of a measure. Journal of Anxiety Disorders, 39, 71-78.

CBCL Internalizing scale (School-age children)

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know)

1 = Somewhat or Sometimes True

2 = Very True or Often True

---

5. There is very little he/she enjoys

14. Cries a lot

29. Fears certain animals, situations, or places, other than school

30. Fears going to school

31. Fears he/she might think or do something bad

32. Feels he/she has to be perfect

33. Feels or complains that no one loves him/her

35. Feels worthless or inferior

42. Would rather be alone than with others

45. Nervous, highstrung, or tense

47. Has nightmares

49. Constipated, doesn't move bowels

50. Too fearful or anxious

51. Feels dizzy or lightheaded

52. Feels too guilty

54. Overtired without good reason

56. Physical problems ***without known medical cause:***

a. Aches or pains (***not*** stomach or headaches)

b. Headaches

c. Nausea, feels sick

d. Problems with eyes (***not*** if corrected by glasses)

e. Rashes or other skin problems

f. Stomach aches

g. Vomiting, throwing up

65. Refuses to talk

69. Secretive, keeps things to self

71. Self-conscious or easily embarrassed

75. Too shy or timid

91. Talks about killing self

102. Underactive, slow moving, or lacks energy

103. Unhappy, sad, or depressed

111. Withdrawn, doesn't get involved with others

112. Worries

CBCL Internalizing scale (Preschool-age children)

Below is a list of items that describe children and youths. For each item that describes your child ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True (as far as you know)

1 = Somewhat or Sometimes True

2 = Very True or Often True

---

1. Aches or pains (without medical cause; do not include stomach or headaches)

2. Acts too young for age

4. Avoids looking others in the eye

7. Can't stand having things out of place

10. Clings to adults or too dependent

12. Constipated, doesn't move bowels (when not sick)

19. Diarrhoea or loose bowels (when not sick)

21. Disturbed by any change in routine

23. Doesn't answer when people talk to him/her

24. Doesn't eat well

33. Feelings are easily hurt

37. Gets too upset when separated from parents

39. Headaches (without medical cause)

43. Looks unhappy without good reason

45. Nausea, feels sick (without medical cause)

46. Nervous movements or twitching

47. Nervous, highstrung or tense

51. Shows panic for no good reason

52. Painful bowel movements (without medical cause)

62. Refuses to play active games

67. Seems unresponsive to affection

68. Self-conscious or easily embarrassed

70. Shows little affection towards people

71. Shows little interest in things around him/her

78. Stomach-aches or cramps (without medical cause)

79. Rapid shifts between sadness and excitement

82. Sudden changes in mood or feelings

83. Sulks a lot

86. Too concerned with neatness or cleanliness

87. Too fearful or anxious

90. Unhappy, sad or depressed

92. Upset by new people or situations

93. Vomiting, throwing up (without medical cause)

97. Whining

98. Withdrawn, doesn't get involved with others

99. Worries

Weekly coping with parenting stress

During ***this difficult situation*** regarding your child, how intensely did you feel these emotions (circle the answer that is best for you):

	1 Not at all	**2 A little**	**3 Somewhat**	**4 Moderate-ly strongly**	**5 Quite strongly**	**6 Very strongly**	**7 Extremely intensely**
Stressed (or overwhelmed or unable to cope)	1	2	3	4	5	6	7
Anxious (or worried or concerned)	1	2	3	4	5	6	7
Angry (or frustrated, irritated or annoyed)	1	2	3	4	5	6	7
Sad (or upset or depressed)	1	2	3	4	5	6	7

Regarding your experience ***during the situation***, please rate the truth of these statements for you (circle the answer that is best for you):

	1 Not at all true	**2 A little true**	**3 Somewhat true**	**4 Moderate-ly true**	**5 Quite true**	**6 Very true**	**7 Extreme-ly true**
I experienced my thoughts and/or feelings as events in my mind, rather than as reflections of reality.	1	2	3	4	5	6	7
I wished I did not have to deal with what was happening.	1	2	3	4	5	6	7
It was unpleasant or uncomfortable to experience my own emotions, and/or watch my child's emotions.	1	2	3	4	5	6	7
I paused to notice how I was feeling about the situation, before I did anything else.	1	2	3	4	5	6	7

Please **very briefly** describe the situation you visualised:

_____
_____
_____

Parent feedback questionnaire

1. Which group format did you prefer? [*Face-to-face / Online*]

2. To what extent did the COVID-19 pandemic affect your ability to benefit from the program?

1 It had a very positive impact	2 It had a moderately positive impact	3 It had a minor positive impact	4 It did not have any impact	5 It had a minor negative impact	6 It had a moderately negative impact	7 It had a very negative impact

3. How important has the training been for you, overall?

1 Not useful at all	2	3	4	5	6	7	8	9	10 Extremely useful

4. Do you feel you got something of lasting value or importance as a result of doing this program? [*Yes / No*]

5. Would you recommend the program to friends or family members? [*Yes / No*]

6. Please answer the following questions:

1	Has your relationship with your emotions changed? Yes/No
	If yes, how? [*free text response*]
2	Did the program change the way you experience your child? Yes/No
	If yes, how has this changed? [*free text response*]
3	Do you think mindfulness can help you cope with your child's anxiety? Yes/No
	If yes, how do you think it will help? [*free text response*]
4	Did the mindful parenting program change the way you view your child's anxiety? Yes/No
	If yes, how did it change? [*free text response*]

v.3

APPENDIX D6

Demographic characteristics:

Descriptive Statistics

Group membership		N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Intervention	Parent age in years	11	15	35	50	42.45	4.845	.486	.661	-.681	1.279
	Child_age_pre	11	7	4	11	6.27	1.954	1.401	.661	2.933	1.279
	Valid N (listwise)	11									
Waitlist	Parent age in years	12	13	31	44	37.75	4.673	.055	.637	-1.529	1.232
	Child_age_pre	12	10	3	13	6.00	3.133	1.085	.637	.871	1.232
	Valid N (listwise)	12									

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Parent age in years	Equal variances assumed	.110	.743	2.370	21	.027	4.705	1.985	.576	8.833
Child age in years	Equal variances assumed	2.049	.167	.248	21	.807	.273	1.101	-2.018	2.563

Child gender:

Group * Child gender Crosstabulation

Count

		Child gender		
		Male	Female	Total
Group	Intervention	5	6	11
	Waitlist	7	5	12
Total		12	11	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.381[a]	1	.537		
Continuity Correction[b]	.040	1	.842		
Likelihood Ratio	.382	1	.536		
Fisher's Exact Test				.684	.421
Linear-by-Linear Association	.365	1	.546		
N of Valid Cases	23				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.26.

b. Computed only for a 2x2 table

Parent relation to child:

Group * Categorised into Mother & Father only Crosstabulation

Count

		Categorised into Mother & Father only		
		1.00	2.00	Total
Group	Intervention	10	1	11
	Waitlist	11	1	12
Total		21	2	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.004[a]	1	.949		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.004	1	.949		
Fisher's Exact Test				1.000	.739
Linear-by-Linear Association	.004	1	.950		
N of Valid Cases	23				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .96.

b. Computed only for a 2x2 table

Caregiver role:

Group * Caregiver status, ie is parent primary carer? Crosstabulation

Count

		Caregiver status, ie is parent primary carer?			
		Yes	No	Shared	Total
Group	Intervention	6	1	4	11
	Waitlist	9	1	2	12
Total		15	2	6	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.226[a]	2	.542
Likelihood Ratio	1.240	2	.538
Linear-by-Linear Association	1.165	1	.281
N of Valid Cases	23		

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is .96.

Number of children in family:

Group * Number of children in family Crosstabulation

Count

		Number of children in family			
		One	Two	Three	Total
Group	Intervention	1	7	3	11
	Waitlist	4	6	2	12
Total		5	13	5	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.037[a]	2	.361
Likelihood Ratio	2.162	2	.339
Linear-by-Linear Association	1.533	1	.216
N of Valid Cases	23		

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is 2.39.

Parent cultural identity:

Group * Parent cultural background Crosstabulation

Count

		Parent cultural background				
		Australian	UK	Eastern European	Middle Eastern	Total
Group	Intervention	10	0	0	1	11
	Waitlist	10	1	1	0	12
Total		20	1	1	1	23

Parent highest level of education:

Group * Parent_education_simplified Crosstabulation

Count

		Parent_education_simplified			
		1.00	2.00	3.00	Total
Group	Intervention	9	1	1	11
	Waitlist	10	1	1	12
Total		19	2	2	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.009[a]	2	.995
Likelihood Ratio	.009	2	.995
Linear-by-Linear Association	.008	1	.930
N of Valid Cases	23		

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is .96.

Parent previous mental health diagnosis:

Group * Parent mental health diagnosis Crosstabulation

Count

		Parent mental health diagnosis		
		Yes	No	Total
Group	Intervention	0	11	11
	Waitlist	3	9	12
Total		3	20	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.163[a]	1	.075		
Continuity Correction[b]	1.342	1	.247		
Likelihood Ratio	4.316	1	.038		
Fisher's Exact Test				.217	.124
Linear-by-Linear Association	3.025	1	.082		
N of Valid Cases	23				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.43.

b. Computed only for a 2x2 table

Parent history of formal mindfulness practice:

Group * Mindfulness hx categorised into yes or no Crosstabulation

Count

		Mindfulness hx categorised into yes or no		
		Yes	No	Total
Group	Intervention	3	8	11
	Waitlist	5	7	12
Total		8	15	23

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.524[a]	1	.469		
Continuity Correction[b]	.082	1	.775		
Likelihood Ratio	.529	1	.467		
Fisher's Exact Test				.667	.389
Linear-by-Linear Association	.501	1	.479		
N of Valid Cases	23				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.83.

b. Computed only for a 2x2 table

Parent length of mindfulness practice history:

Group * Mindfulness_duration_simplified Crosstabulation

Count

		Mindfulness_duration_simplified		
		< 1 year	> or equal to 1 year	Total
Group	Intervention	2	1	3
	Waitlist	3	2	5
Total		5	3	8

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.036[a]	1	.850		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.036	1	.850		
Fisher's Exact Test				1.000	.714
Linear-by-Linear Association	.031	1	.860		
N of Valid Cases	8				

a. 4 cells (100.0%) have expected count less than 5. The minimum expected count is 1.13.

b. Computed only for a 2x2 table

Parent frequency of current mindfulness practice:

Group * Mindfulness_freq_simplified Crosstabulation

Count

		Mindfulness_freq_simplified		
		< monthly	monthly or more	Total
Group	Intervention	2	1	3
	Waitlist	3	2	5
Total		5	3	8

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.036[a]	1	.850		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.036	1	.850		
Fisher's Exact Test				1.000	.714
Linear-by-Linear Association	.031	1	.860		
N of Valid Cases	8				

a. 4 cells (100.0%) have expected count less than 5. The minimum expected count is 1.13.

Pre-program differences on outcome variables

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PSS_Total_pre_new	1.469	.239	.074	21	.942	.20455	2.77034	-5.55669	5.96578
CERQ_Adaptive_pre_without22or27	1.500	.234	.349	21	.731	.70455	2.01836	-3.49286	4.90195
CERQ_Maladaptive_pre	2.576	.123	.893	21	.382	1.87121	2.09633	-2.48834	6.23077
IMP_Total_pre_new	.273	.607	.013	21	.990	.07576	5.75853	-11.8997	12.05127
IMP_LFA_pre	.088	.770	.508	21	.617	.46212	.90927	-1.42881	2.35305
IMP_CC_pre	.140	.712	.199	21	.844	.32576	1.63410	-3.07253	3.72405
IMP_NJAPF_Dutch_pre	.194	.664	-.081	21	.936	-.15152	1.86300	-4.02584	3.72281
IMP_EAC_pre	2.552	.125	-1.43	21	.165	-1.04545	.72716	-2.55767	.46676
IMP_EAS_pre	7.127	.014	-.123	21	.903	-.12879	1.04512	-2.30224	2.04467
IMP_ENRP_pre	.506	.485	.432	21	.670	.61364	1.41934	-2.33805	3.56532
PAB_Overprotection_pre	2.271	.147	.734	21	.471	2.01515	2.74374	-3.69078	7.72108
PAAQ_Total_pre	.592	.450	.584	21	.565	2.76515	4.73538	-7.08260	12.61290
School_CBCL_Internalising_pre	1.405	.259	.949	12	.361	3.45833	3.64528	-4.48404	11.40071
Preschool_CBCL_Internalising_pre	.374	.560	-.117	7	.910	-.66667	5.71964	-14.1914	12.85813

Pre-program means and standard deviations for outcome variables

Descriptive Statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
Intervention	IMP_Total_pre	11	74.00	115.00	93.9091	12.27562
	IMP_LFA_pre	11	13.00	20.00	15.5455	2.25227
	IMP_CC_pre	11	17.00	30.00	23.9091	4.27679
	IMP_NJAPF_Dutch_pre	11	12.00	25.00	17.1818	4.75012
	IMP_EAC_pre	11	9.00	13.00	10.4545	1.29334
	IMP_EAS_pre	11	9.00	13.00	11.4545	1.69491
	IMP_ENRP_pre	11	10.00	18.00	15.3636	2.65604

	PSS_Total_pre_new	11	38.00	54.00	44.4545	5.04705
	CERQ_Adaptive_pre_without22or27	11	17.00	31.00	22.4545	5.31721
	CERQ_Maladaptive_pre	11	12.00	36.00	20.4545	6.62365
	PAAQ_Total_pre	11	42.00	73.00	57.1818	9.99818
	PAB_Overprotection_pre	11	20.00	44.00	29.1818	7.79510
	School_CBCL_Internalising_pre	8	5.00	28.00	14.6250	7.72635
	Preschool_CBCL_Internalising_pre	3	8.00	20.00	15.6667	6.65833
	Valid N (listwise)	0				
Waitlist	IMP_Total_pre	12	69.00	119.00	93.8333	15.04438
	IMP_LFA_pre	12	12.00	18.00	15.0833	2.10878
	IMP_CC_pre	12	18.00	29.00	23.5833	3.55370
	IMP_NJAPF_Dutch_pre	12	9.00	22.00	17.3333	4.18511
	IMP_EAC_pre	12	8.00	15.00	11.5000	2.06706
	IMP_EAS_pre	12	7.00	16.00	11.5833	3.05877
	IMP_ENRP_pre	12	8.00	22.00	14.7500	3.95716
	PSS_Total_pre_new	12	28.00	56.00	44.2500	7.80588
	CERQ_Adaptive_pre_without22or27	12	14.00	29.00	21.7500	4.35107
	CERQ_Maladaptive_pre	12	14.00	24.00	18.5833	2.87492
	PAAQ_Total_pre	12	33.00	77.00	54.4167	12.44229
	PAB_Overprotection_pre	12	21.00	38.00	27.1667	5.21943
	School_CBCL_Internalising_pre	6	7.00	19.00	11.1667	5.07609
	Preschool_CBCL_Internalising_pre	6	7.00	30.00	16.3333	8.59457
	Valid N (listwise)	0				

Mid-program means and standard deviations for outcome variables

Descriptive Statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
Intervention	IMP_Total_mid	11	78.00	114.00	101.4545	10.69919
	IMP_LFA_mid	11	14.00	20.00	16.8182	1.72152
	IMP_CC_mid	11	19.00	29.00	24.8182	3.06001
	IMP_NJAPF_Dutch_mid	11	12.00	25.00	18.5455	4.39007
	IMP_EAC_mid	11	9.00	12.00	10.9091	1.22103
	IMP_EAS_mid	11	9.00	16.00	13.7273	2.00454
	IMP_ENRP_mid	11	10.00	21.00	16.6364	3.10718
	PSS_Total_mid_new	11	33.00	53.00	41.1818	5.49214
	CERQ_Adaptive_mid_without22or27	11	16.00	29.00	22.0909	4.65735
	CERQ_Maladaptive_mid	11	12.00	26.00	17.4545	3.75136
	PAAQ_Total_mid	11	35.00	65.00	48.4545	9.84239
	PAB_Overprotection_mid	11	13.00	37.00	24.6364	6.91770
	School_CBCL_Internalising_mid	8	5.00	18.00	10.6250	4.56501
	Preschool_CBCL_Internalising_mid	3	13.00	25.00	17.3333	6.65833
	Valid N (listwise)	0				
Waitlist	IMP_Total_mid	12	67.00	129.00	96.9167	17.97705
	IMP_LFA_mid	12	11.00	21.00	16.0000	3.10425
	IMP_CC_mid	12	19.00	29.00	23.5833	3.44986
	IMP_NJAPF_Dutch_mid	12	7.00	24.00	17.3333	5.05125
	IMP_EAC_mid	12	7.00	15.00	11.5833	2.35327
	IMP_EAS_mid	12	8.00	18.00	12.8333	3.06989
	IMP_ENRP_mid	12	8.00	25.00	15.5833	4.77605
	PSS_Total_mid_new	12	25.00	56.00	44.2500	8.78144

	CERQ_Adaptive_mid_without22or27	12	16.00	27.00	22.1667	3.21455
	CERQ_Maladaptive_mid	12	15.00	26.00	19.3333	3.39340
	PAAQ_Total_mid	12	36.00	76.00	54.4167	12.77397
	PAB_Overprotection_mid	12	19.00	39.00	26.5000	5.91608
	School_CBCL_Internalising_mid	5	4.00	21.00	10.6000	7.23187
	Preschool_CBCL_Internalising_mid	7	5.00	26.00	14.2857	8.49930
	Valid N (listwise)	0				

Post-program means and standard deviations for outcome variables

Descriptive Statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
Intervention	IMP_Total_post	10	84.00	120.00	106.4000	11.22695
	IMP_LFA_post	10	15.00	21.00	17.5000	2.01384
	IMP_CC_post	10	18.00	30.00	25.4000	3.92145
	IMP_NJAPF_Dutch_post	10	15.00	26.00	20.5000	3.24037
	IMP_EAC_post	10	10.00	13.00	11.7000	1.05935
	IMP_EAS_post	10	10.00	16.00	14.1000	1.79196
	IMP_ENRP_post	10	13.00	21.00	17.2000	2.61619
	PSS_Total_post_new	10	28.00	48.00	37.3000	6.58365
	CERQ_Adaptive_post_without22or27	10	13.00	33.00	23.3000	7.37940
	CERQ_Maladaptive_post	10	14.00	24.00	17.1000	3.07137
	PAAQ_Total_post	10	23.00	59.00	45.8000	11.15347
	PAB_Overprotection_post	10	15.00	35.00	25.7000	6.18331
	School_CBCL_Internalising_post	7	7.00	18.00	11.8571	3.89138
	Preschool_CBCL_Internalising_post	3	10.00	25.00	15.3333	8.38650
	Valid N (listwise)	0				
Waitlist	IMP_Total_post	9	63.00	121.00	91.6667	16.82260
	IMP_LFA_post	9	12.00	18.00	14.6667	2.12132
	IMP_CC_post	9	20.00	28.00	22.7778	2.90593
	IMP_NJAPF_Dutch_post	9	6.00	22.00	15.7778	5.73973
	IMP_EAC_post	9	10.00	15.00	12.0000	1.41421
	IMP_EAS_post	9	4.00	20.00	11.8889	4.88478
	IMP_ENRP_post	9	7.00	24.00	14.5556	4.58561
	PSS_Total_post_new	9	37.00	51.00	44.6667	3.96863
	CERQ_Adaptive_post_without22or27	9	19.00	25.00	22.0000	2.12132
	CERQ_Maladaptive_post	9	13.00	25.00	18.3333	4.50000
	PAAQ_Total_post	9	46.00	75.00	57.4444	9.19390
	PAB_Overprotection_post	9	17.00	34.00	26.4444	5.89727
	School_CBCL_Internalising_post	4	3.00	29.00	15.5000	10.75484
	Preschool_CBCL_Internalising_post	5	12.00	19.00	15.6000	2.70185
	Valid N (listwise)	0				

Follow-up means and standard deviations for outcome variables

Descriptive Statistics

Group		N	Minimum	Maximum	Mean	Std. Deviation
Intervention	IMP_Total_fup_new	9	83.00	127.00	108.7778	13.98908
	IMP_LFA_fup	9	15.00	21.00	18.3333	2.23607
	IMP_CC_fup	9	18.00	30.00	25.4444	4.58561
	IMP_NJAPF_Dutch_fup	9	15.00	26.00	21.5556	4.09607
	IMP_EAC_fup	9	9.00	15.00	11.7778	1.85592
	IMP_EAS_fup	9	9.00	17.00	13.7778	2.43812

	IMP_ENRP_fup	9	13.00	22.00	17.8889	3.14024
	PSS_Total_fup_new	9	26.00	42.00	34.0000	4.97494
	CERQ_adaptive_fup_without 22or27	9	17.00	34.00	25.0000	6.24500
	CERQ_Maladaptive_fup	9	14.00	20.00	16.4444	1.94365
	PAAQ_Total_fup	9	28.00	53.00	45.2222	8.37821
	PAB_Overprotection_fup	9	11.00	42.00	25.4444	9.48830
	School_CBCL_Internalising_ fup	6	3.00	15.00	9.5000	4.18330
	Preschool_CBCL_Internalisi ng_fup	3	10.00	19.00	15.0000	4.58258
	Valid N (listwise)	0				
Waitlist	IMP_Total_fup_new	12	71.00	120.00	96.8333	15.00808
	IMP_LFA_fup	12	11.00	20.00	15.3333	2.83912
	IMP_CC_fup	12	20.00	29.00	24.9167	2.87492
	IMP_NJAPF_Dutch_fup	12	10.00	23.00	17.1667	4.21757
	IMP_EAC_fup	12	8.00	15.00	11.5000	1.93061
	IMP_EAS_fup	12	5.00	19.00	12.5833	3.80092
	IMP_ENRP_fup	12	9.00	22.00	15.3333	4.05268
	PSS_Total_fup_new	12	28.00	57.00	43.1667	9.08379
	CERQ_adaptive_fup_without 22or27	12	16.00	31.00	23.5833	4.58175
	CERQ_Maladaptive_fup	12	13.00	24.00	18.0833	3.28795
	PAAQ_Total_fup	12	34.00	72.00	52.4167	11.93511
	PAB_Overprotection_fup	12	21.00	38.00	27.3333	4.79267
	School_CBCL_Internalising_ fup	5	.00	36.00	15.2000	13.55360
	Preschool_CBCL_Internalisi ng_fup	7	5.00	31.00	16.0000	9.60902
	Valid N (listwise)	0				

Within-group effect sizes

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Pre-mid within-group effect sizes (T1-T2)**														
2		IMP total	LFA	CC	NJAPF	EAC	EAS	ENRP	PSS	CERQ Ada	CERQ Mal	PAAQ	PABUA	CBCL School	CBCL Preschool
3	Mean pre	93.9091	15.5455	23.9091	17.1818	10.4545	11.4545	15.3636	44.45	22.45	20.45	57.18	29.18	14.63	15.67
4	SD pre	12.27562	2.25227	4.27679	4.75012	1.29334	1.69491	2.65604	5.05	5.32	6.62	10	7.8	7.73	6.66
5	Mean mid	101.4545	16.8182	24.8182	18.5455	10.9091	13.7273	16.6364	41.18	22.09	17.45	48.45	24.64	10.63	17.33
6	SD mid	10.69919	1.72152	3.06001	4.39007	1.22103	2.00454	3.10718	5.49	4.66	3.75	9.84	6.92	4.57	6.66
7	SD diff	6.954113	1.534839	2.519489	2.70704	1.136877	2.049776	1.637022	4.460188	4.039332	4.958723	8.922149	4.241243	5.66930557	4.719934086
8	r	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
9	SD within	8.977721	1.981469	3.252647	3.494773	1.467702	2.646249	2.113387	5.758078	5.214756	6.401684	11.51844	5.475421	7.31904202	6.093408704
10	CMA d within	-0.84046	-0.6423	-0.2795	-0.39021	-0.30974	-0.85888	-0.60226	0.567898	0.069035	0.468627	0.757915	0.82916	0.54651961	-0.272425514
11	Improvement or deteri	imp.	imp	imp	imp	imp	imp	imp	imp	det	imp	imp	imp	imp.	det
12															
13															
14	**Mid-post within-group effect sizes (T2-T3)**														
15		IMP total	LFA	CC	NJAPF	EAC	EAS	ENRP	PSS	CERQ Ada	CERQ Mal	PAAQ	PABUA	CBCL School	CBCL Preschool
16	Mean mid	101.4545	16.8182	24.82	18.55	10.9091	13.7273	16.6364	41.18	22.09	17.45	48.45	24.64	10.63	17.33
17	SD mid	10.69919	1.72152	3.06001	4.39007	1.22103	2.00454	3.107	5.49	4.66	3.75	9.84	6.92	4.57	6.66
18	Mean post	106.4	17.5	25.4	20.5	11.7	14.1	14.1	37.3	23.3	17.1	45.8	25.7	11.86	15.33
19	SD post	11.23	2.01	3.92	3.24	1.06	1.79	2.62	6.58	7.38	3.07	11.15	6.18	3.89	8.34
20	SD diff	8.045557	2.051957	1.763834	3.700798	1.218762	1.967573	2.211083	5.328946	4.984186	3.106304	6.61957	4.466902	3.26691403	6.250714245
21	r	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
22	SD within	10.38677	2.649065	2.2771	4.77771	1.573415	2.540126	2.854496	6.879639	6.434556	4.010221	8.545829	5.766746	4.21756788	8.069637391
23	CMA d within	-0.47613	-0.25737	-0.25471	-0.40815	-0.50266	-0.14672	0.888563	0.563983	-0.18805	0.087277	0.310093	-0.18381	-0.29163727	0.247842611
24	Improvement or deteri	imp.	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp	det	det	imp
25															
26	**Post-follow up within-group effect sizes (T2-T3)**														
27		IMP total	LFA	CC	NJAPF	EAC	EAS	ENRP	PSS	CERQ Ada	CERQ Mal	PAAQ	PABUA	CBCL School	CBCL Preschool
28	Mean post	106.4	17.5	25.4	20.5	11.7	14.1	17.2	37.3	23.3	17.1	45.8	25.7	11.86	15.33
29	SD post	11.23	2.01	3.92	3.24	1.06	1.79	2.62	6.58	7.38	3.07	11.15	6.18	3.89	8.34
30	Mean fup	108.78	18.33	25.44	21.56	11.78	13.78	17.89	34	25	16.44	45.22	25.44	9.5	15
31	SD fup	13.99	2.24	4.59	4.1	1.86	2.44	3.14	4.97	6.25	1.94	8.38	9.49	4.18	4.58
32	SD diff	5.244667	1.195033	2.13667	2.970443	1.150447	1.696787	1.914001	5.978447	6.263547	2.572479	6.54297	5.316149	4.67143	7.73559
33	r	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
34	SD within	6.770836	1.542781	2.758429	3.834825	1.485221	2.190542	2.470964	7.718142	8.086205	3.321056	8.446938	6.863119	6.03078522	9.986598162
35	CMA d within	-0.35151	-0.53799	-0.0145	-0.27641	-0.05386	0.146083	-0.27924	0.427564	-0.21023	0.198732	0.068664	0.037884	0.39132549	0.033044285
36	Improvement or deteri	imp.	imp	imp	imp	imp	det	imp	imp	imp	imp	imp	imp	imp	imp

38	**Pre-post within-group effect sizes (T1-T3)**														
39		IMP total	LFA	CC	NJAPF	EAC	EAS	ENRP	PSS	CERQ Ada	CERQ Mal	PAAQ	PABUA	CBCL School	CBCL Preschool
40	Mean pre	93.91	15.55	23.91	17.18	10.45	11.45	15.36	44.45	22.45	20.45	57.18	29.18	14.63	15.67
41	SD pre	12.28	2.25	4.28	4.75	1.29	1.69	2.66	5.05	5.32	6.62	10	7.8	7.73	6.66
42	Mean post	106.4	17.5	25.4	20.5	11.7	14.1	17.2	37.3	23.3	17.1	45.8	25.7	11.86	15.33
43	SD post	11.23	2.01	3.92	3.24	1.06	1.79	2.62	6.58	7.38	3.07	11.15	6.18	3.89	8.34
44	SD diff	10.11079	2.258188	2.404917	3.947758	1.249561	2.193824	2.120631	6.21449	4.147852	5.520297	11.50998	6.250146	8.12515734	8.246211251
45	r	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
46	SD within	13.05297	2.915309	3.104734	5.096534	1.613177	2.832215	2.737723	8.022872	5.354854	7.126673	14.85931	8.068904	10.489533	10.64581295
47	CMA d within	-0.95687	-0.66888	-0.47991	-0.65142	-0.77487	-0.93566	-0.67209	0.891202	-0.15873	0.470065	0.76585	0.431285	0.26407277	0.031937439
48	Improvement or deteri	imp.	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp.	imp
49															
50	**Pre-follow up within-group effect sizes (T1-T4)**														
51		IMP total	LFA	CC	NJAPF	EAC	EAS	ENRP	PSS	CERQ Ada	CERQ Mal	PAAQ	PABUA	CBCL School	CBCL Preschool
52	Mean pre	93.91	15.55	23.91	17.18	10.45	11.45	15.36	44.45	22.45	20.45	57.18	29.18	14.63	15.67
53	SD pre	12.28	2.25	4.28	4.75	1.29	1.69	2.66	5.05	5.32	6.62	10	7.8	7.73	6.66
54	Mean fup	108.78	18.33	25.44	21.56	11.78	13.78	17.89	34	25	16.44	45.22	25.44	9.5	15
55	SD fup	13.99	2.24	4.59	4.1	1.86	2.44	3.14	4.97	6.25	1.94	8.38	9.49	4.18	4.58
56	SD diff	10.04798	2.63764	2.481359	3.45791	1.325573	2.015417	2.111195	6.887186	6.281871	5.683309	10.75706	6.951875	9.87006493	2.713136766
57	r	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
58	SD within	12.97189	3.405178	3.203421	4.464143	1.711307	2.601892	2.725541	8.891319	8.109861	7.33712	13.8873	8.974833	12.742199	3.502644504
59	CMA d within	-1.14633	-0.8164	-0.47761	-0.98115	-0.77718	-0.8955	-0.92826	1.175304	-0.31443	0.546536	0.861218	0.416721	0.40259927	0.191284042
60	Improvement or deteri	imp.	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp	imp.	imp

Between-group effect sizes (I/v=Intervention; Ctl = Control)

Baseline (T1) effect sizes

H7 =ABS((B7-E7)/SQRT((((D7-1)*C7^2+(G7-1)*F7^2))/((D7+G7)-2)))

	A	B	C	D	E	F	G	H	I
4		*Instructions: Enter the values in the grey cells below.*						*Cohen's d calculated*	
5								*with the formula above*	
6		**Pre I/v Mean**	**SD 1**	**N 1**	**Pre Ctl Mean 2**	**SD 2**	**N 2**	**d**	
7	IMP Total	93.91	12.28	11	93.83	15.04	12	0.01	
8	LFA	15.55	2.25	11	15.08	2.11	12	0.22	
9	CC	23.91	4.28	11	23.58	3.55	12	0.08	
10	NJAPF	17.18	4.75	11	17.33	4.19	12	0.03	
11	EAC	10.45	1.29	11	11.50	2.07	12	0.60	
12	EAS	11.45	1.69	11	11.58	3.06	12	0.05	
13	ENRP	15.36	2.66	11	14.75	3.96	12	0.18	
14	PSS	44.45	5.05	11	44.25	7.81	12	0.03	
15	PAAQ	57.18	10	11	54.42	12.44	12	0.24	
16	PABUA	29.18	7.80	11	27.17	5.22	12	0.31	
17	CERQ Adaptive	22.45	5.32	11	21.75	4.35	12	0.14	
18	CERQ Maladaptive	20.45	6.62	11	18.58	2.87	12	0.37	
19	CBCL School	14.63	7.73	8	11.17	5.08	6	0.51	
20	CBCL Preschool	15.67	6.66	3	16.33	8.59	6	0.08	
21									

Post-program (T1-T3) effect sizes; controlling for baseline

Q4 | =O4*(H4/P4)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1																	
2		I/v *M* post	I/v *M* pre	I/v *M* diff	Ctl *M* post	Ctl *M* pre	Ctl *M* diff	T1-T3 diff	I/v *n* pre	I/v *SD* pre	Ctl *n* pre	Ctl *SD* pre	*SD* s adde	I/v *n* + Ctl *n*	Bias correctio	*SD* pre poole	*d* (pre-post
3																	controlled)
4	IMP Total	106.4	93.91	12.49	91.67	93.83	-2.16	14.65	11	12.28	12	15.04	3996.20	21	0.96	13.79	1.024
5	LFA	17.5	15.55	1.95	14.67	15.08	-0.41	2.36	11	2.25	12	2.11	99.60	21	0.96	2.18	1.044
6	CC	25.4	23.91	1.49	22.78	23.58	-0.8	2.29	11	4.28	12	3.55	321.81	21	0.96	3.91	0.564
7	NJAPF	20.5	17.18	3.32	15.78	17.33	-1.55	4.87	11	4.75	12	4.19	418.74	21	0.96	4.47	1.051
8	EAC	11.7	10.45	1.25	12	11.5	0.5	0.75	11	1.29	12	2.07	63.77	21	0.96	1.74	0.415
9	EAS	14.1	11.45	2.65	11.89	11.58	0.31	2.34	11	1.69	12	3.06	131.56	21	0.96	2.50	0.901
10	ENRP	17.2	15.36	1.84	14.56	14.75	-0.19	2.03	11	2.66	12	3.96	243.25	21	0.96	3.40	0.575
11	PSS	37.3	44.45	-7.15	44.67	44.25	0.42	-7.57	11	5.05	12	7.81	925.98	21	0.96	6.64	-1.099
12	CERQ Adaptive	23.3	22.45	0.85	22	21.75	0.25	0.6	11	5.32	12	4.35	491.17	21	0.96	4.84	0.120
13	CERQ Maladapt	17.1	20.45	-3.35	18.33	18.58	-0.25	-3.1	11	6.62	12	2.87	528.85	21	0.96	5.02	-0.595
14	PAAQ	45.8	57.18	-11.38	57.44	54.42	3.02	-14.4	11	10	12	12.44	2702.29	21	0.96	11.34	-1.224
15	PABUA	25.7	29.18	-3.48	26.44	27.17	-0.73	-2.75	11	7.8	12	5.22	908.13	21	0.96	6.58	-0.403
16	CBCL School	11.86	14.63	-2.77	15.5	11.17	4.33	-7.1	11	7.73	12	5.08	881.40	21	0.96	6.48	-1.056
17	CBCL Preschool	15.33	15.67	-0.34	15.6	16.33	-0.73	0.39	11	6.66	12	8.59	1255.23	21	0.96	7.73	0.049

Follow-up (T1-T4) effect sizes; controlling for baseline

19																	
20		I/v *M* fup	I/v *M* pre	I/v *M* diff	Ctl *M* fup	Ctl *M* pre	Ctl *M* diff	T1-T4 diff	I/v *n* pre	I/v *SD* pre	Ctl *n* pre	Ctl *SD* pre	*SD* s adde	I/v *n* + Ctl *n*	Bias correctio	*SD* pre poole	*d* (pre-post
21																	controlled)
22	IMP Total	108.78	93.91	14.87	96.83	93.83	3	11.87	11	12.28	12	15.04	3996.20	21	0.96	13.79	0.829
23	LFA	18.33	15.55	2.78	15.33	15.08	0.25	2.53	11	2.25	12	2.11	99.60	21	0.96	2.18	1.120
24	CC	25.44	23.91	1.53	24.92	23.58	1.34	0.19	11	4.28	12	3.55	321.81	21	0.96	3.91	0.047
25	NJAPF	21.56	17.18	4.38	17.17	17.33	-0.16	4.54	11	4.75	12	4.19	418.74	21	0.96	4.47	0.980
26	EAC	11.78	10.45	1.33	11.5	11.5	0	1.33	11	1.29	12	2.07	63.77	21	0.96	1.74	0.736
27	EAS	13.78	11.45	2.33	12.58	11.58	1	1.33	11	1.69	12	3.06	131.56	21	0.96	2.50	0.512
28	ENRP	17.89	15.36	2.53	15.33	14.75	0.58	1.95	11	2.66	12	3.96	243.25	21	0.96	3.40	0.552
29	PSS	34	44.45	-10.45	43.17	44.25	-1.08	-9.37	11	5.05	12	7.81	925.98	21	0.96	6.64	-1.360
30	CERQ Adaptive	25	22.45	2.55	23.58	21.75	1.83	0.72	11	5.32	12	4.35	491.17	21	0.96	4.84	0.143
31	CERQ Maladapt	16.44	20.45	-4.01	18.08	18.58	-0.5	-3.51	11	6.62	12	2.87	528.85	21	0.96	5.02	-0.674
32	PAAQ	45.22	57.18	-11.96	52.42	54.42	-2	-9.96	11	10	12	12.44	2702.29	21	0.96	11.34	-0.846
33	PABUA	25.44	29.18	-3.74	27.33	27.17	0.16	-3.9	11	7.8	12	5.22	908.13	21	0.96	6.58	-0.572
34	CBCL School	9.5	14.63	-5.13	15.2	11.17	4.03	-9.16	11	7.73	12	5.08	881.40	21	0.96	6.48	-1.363
35	CBCL Preschool	15	15.67	-0.67	16	16.33	-0.33	-0.34	11	6.66	12	8.59	1255.23	21	0.96	7.73	-0.042

Weekly coping with stress data:

Intensity of stress

Descriptive Statistics

	Mean	Std. Deviation	N
W1_Intensity_stress	4.1818	1.40130	11
W2_Intensity_stress	2.8000	1.32665	11
W3_Intensity_stress	2.3764	.62250	11
W4_Intensity_stress	2.5564	1.01105	11
W5_Intensity_stress	2.3327	1.26491	11
W6_Intensity_stress	3.0000	1.18322	11
W7_Intensity_stress	3.8582	1.63882	11
W8_Intensity_stress	2.8891	1.22020	11

Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Week	.006	38.514	27	.103	.589	1.000	.143

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept
Within Subjects Design: Week

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Sphericity Assumed	35.381	7	5.054	3.380	.004	.253
Error(Week)	Sphericity Assumed	104.682	70	1.495			

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Week	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Linear	.292	1	.292	.100	.759	.010
	Quadratic	15.893	1	15.893	17.788	.002	.640
	Cubic	13.552	1	13.552	38.717	.000	.795
Error(Week)	Linear	29.267	10	2.927			
	Quadratic	8.935	10	.893			
	Cubic	3.500	10	.350			

Experiential avoidance

Descriptive Statistics

	Mean	Std. Deviation	N
W1_Exp_avoidance	5.0000	1.09545	11
W2_Exp_avoidance	4.1500	1.34257	11
W3_Exp_avoidance	3.3118	.99844	11
W4_Exp_avoidance	3.0000	1.00000	11
W5_Exp_avoidance	2.3891	.94281	11
W6_Exp_avoidance	2.6418	1.27895	11
W7_Exp_avoidance	3.4291	.90633	11
W8_Exp_avoidance	2.6673	1.02470	11

Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Week	.010	34.220	27	.214	.503	.809	.143

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept
Within Subjects Design: Week

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Sphericity Assumed	59.160	7	8.451	7.139	.000	.417
Error(Week)	Sphericity Assumed	82.863	70	1.184			

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Week	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Linear	33.308	1	33.308	13.640	.004	.577
	Quadratic	17.704	1	17.704	35.990	.000	.783
	Cubic	1.603	1	1.603	1.736	.217	.148
Error(Week)	Linear	24.419	10	2.442			
	Quadratic	4.919	10	.492			
	Cubic	9.231	10	.923			

Self-regulation

Descriptive Statistics

	Mean	Std. Deviation	N
W1_Self_regulation	2.7273	1.61808	11
W2_Self_regulation	3.0000	1.61245	11
W3_Self_regulation	3.8764	.94208	11
W4_Self_regulation	5.1109	1.75752	11
W5_Self_regulation	3.2218	1.24722	11
W6_Self_regulation	3.1418	1.13389	11
W7_Self_regulation	4.0000	1.54919	11
W8_Self_regulation	4.0000	1.34164	11

Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Week	.049	22.473	27	.766	.606	1.000	.143

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept
Within Subjects Design: Week

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Sphericity Assumed	45.586	7	6.512	3.400	.003	.254
Error(Week)	Sphericity Assumed	134.084	70	1.915			

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Week	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Linear	6.309	1	6.309	6.373	.030	.389
	Quadratic	4.873	1	4.873	1.446	.257	.126
	Cubic	9.026	1	9.026	7.056	.024	.414
Error(Week)	Linear	9.900	10	.990			
	Quadratic	33.694	10	3.369			
	Cubic	12.792	10	1.279			

Decentering from mental events

Descriptive Statistics

	Mean	Std. Deviation	N
W1_Mental_events	3.6364	1.36182	11
W2_Mental_events	2.9000	1.75784	11
W3_Mental_events	2.5000	1.18322	11
W4_Mental_events	3.4436	1.27367	11
W5_Mental_events	3.0000	1.67332	11
W6_Mental_events	2.0000	1.09545	11
W7_Mental_events	3.0000	1.00000	11
W8_Mental_events	2.8891	1.29957	11

Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Week	.018	29.862	27	.391	.543	.919	.143

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept
Within Subjects Design: Week

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Sphericity Assumed	20.067	7	2.867	1.980	.070	.165
Error(Week)	Sphericity Assumed	101.333	70	1.448			

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Week	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Week	Linear	2.917	1	2.917	1.071	.325	.097
	Quadratic	2.248	1	2.248	3.635	.086	.267
	Cubic	.034	1	.034	.031	.863	.003
Error(Week)	Linear	27.242	10	2.724			
	Quadratic	6.185	10	.618			
	Cubic	10.816	10	1.082			

Reliable change analysis:

Pre-Post program

B10 =B9/B8

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**IMP Total**												
2	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	
3	Mean pre	98	115	74	93	89	107	83	96	78	101	99	
4	Mean post	107	117	84	100		120	118	105	96	104	113	
5	SD pre	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	
6	Cronbach alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
7	SEM	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	
8	Sdiff	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	
9	Pre-post change	-9	-2	-10	-7		-13	-35	-9	-18	-3	-14	
10	RC value	-1.95876	-0.43528	-2.17639	-1.52348		-2.82931	-7.61738	-1.95876	-3.91751	-0.65292	-3.04695	
11	RESULTS: reliable improvement in 7 parents; improvement in 3 parents, missing data for 1 parent												
12													
13	**IMP LFA**												
14	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	
15	Mean pre	15	18	16	16	17	14	13	13	13	16	20	
16	Mean post	19	19	15	16		18	19	17	15	16	21	
17	SD pre	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	
18	Cronbach alpha	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	
19	SEM	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	
20	Sdiff	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	
21	Pre-post change	-4	-1	1	0		-4	-6	-4	-2	0	-1	
22	RC value	-2.37566	-0.59391	0.593914	0		-2.37566	-3.56348	-2.37566	-1.18783	0	-0.59391	
23	RESULTS: reliable improvement in 4 parents; improvement in 3 parents, deterioration in 1 parent, no change in 2 parents, missing data for 1 parent												

25	**IMP CC**											
26	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
27	Mean pre	29	30	17	27	21	24	23	26	17	24	25
28	Mean post	30	27	18	27		29	29	25	20	24	25
29	SD pre	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28
30	Cronbach alpha	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
31	SEM	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455
32	Sdiff	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074
33	Pre-post change	-1	3	-1	0		-5	-6	1	-3	0	0
34	RC value	-0.52245	1.567337	-0.52245	0		-2.61223	-3.13467	0.522446	-1.56734	0	0
35	RESULTS: reliable improvement in 2 parents; improvement in 3 parents, no change in 3 parents,											
36	deterioration in 2 parents; missing data for 1 parent											
37												
38	**IMP NJAPF**											
39	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
40	Mean pre	16	24	12	13	17	25	13	19	16	22	12
41	Mean post	17	24	18	15		26	22	21	21	21	20
42	SD pre	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
43	Cronbach alpha	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
44	SEM	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667
45	Sdiff	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682
46	Pre-post change	-1	0	-6	-2		-1	-9	-2	-5	1	-8
47	RC value	-0.38437	0	-2.3062	-0.76873		-0.38437	-3.4593	-0.76873	-1.92183	0.384367	-3.07493
48	RESULTS: reliable improvement in 3 parents; improvement in 5 parents, no change in 1 parent,											
49	deterioration in 1 parent; missing data for 1 parent											

51	**IMP EAC**											
52	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
53	Mean pre	11	12	10	9	9	13	10	10	11	9	11
54	Mean post	12	12	10	10		12	13	12	12	11	13
55	SD pre	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
56	Cronbach alpha	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
57	SEM	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242
58	Sdiff	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747
59	Pre-post change	-1	0	0	-1		1	-3	-2	-1	-2	-2
60	RC value	-0.9845	0	0	-0.9845		0.984497	-2.95349	-1.96899	-0.9845	-1.96899	-1.96899
61	RESULTS: reliable improvement in 4 parents; improvement in 3 parents, no change in 2 parents, deterioration in 1 parent,											
62	missing data for 1 parent											
64	**IMP EAS**											
65	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
66	Mean pre	13	13	9	12	10	13	10	11	9	13	13
67	Mean post	14	16	10	14		16	15	15	13	15	13
68	SD pre	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69
69	Cronbach alpha	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
70	SEM	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654
71	Sdiff	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786
72	Pre-post change	-1	-3	-1	-2		-3	-5	-4	-4	-2	0
73	RC value	-0.95989	-2.87967	-0.95989	-1.91978		-2.87967	-4.79945	-3.83956	-3.83956	-1.91978	0
74	RESULTS: reliable improvement in 5 parents; improvement in 4 parents, no change in 1 parent, missing data for 1 parent											
75												
76	**IMP ENRP**											
77	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
78	Mean pre	14	18	10	16	15	18	14	17	12	17	18
79	Mean post	15	19	13	18		19	20	15	15	17	21
80	SD pre	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66
81	Cronbach alpha	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
82	SEM	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798
83	Sdiff	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542
84	Pre-post change	-1	-1	-3	-2		-1	-6	2	-3	0	-3
85	RC value	-0.8861	-0.8861	-2.6583	-1.7722		-0.8861	-5.31659	1.772197	-2.6583	0	-2.6583
86	RESULTS: reliable improvement in 4 parents; improvement in 4 parents, no change in 1 parent, deterioration in 1 parent; missing data for 1 parent											
88	**PSS**											
89	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
90	Mean pre	41	38	47	54	44	41	38	42	50	47	47
91	Mean post	34	33	40	48		28	31	44	43	40	32
92	SD pre	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05
93	Cronbach alpha	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
94	SEM	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005
95	Sdiff	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607
96	Pre-post change	7	5	7	6		13	7	-2	7	7	15
97	RC value	1.922228	1.37302	1.922228	1.647624		3.569853	1.922228	-0.54921	1.922228	1.922228	4.119061
98	RESULTS: 2 parents reliably improved; 7 improved; 1 worsened; 1 data missing											
99												
100	**CERQ Adaptive**											
101	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
102	Mean pre	19	27	19	29	23	17	31	19	17	28	18
103	Mean post	16	33	13	31		25	33	18	17	26	21
104	SD pre	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32
105	Cronbach alpha	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
106	SEM	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678
107	Sdiff	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307
108	Pre-post change	3	-6	6	-2		-8	-2	1	0	2	-3
109	RC value	0.782002	-1.564	1.564004	-0.52133		-2.08534	-0.52133	0.260667	0	0.521335	-0.782
110	RESULTS: reliable improvement in 1 parents; improvement in 4 parents, no change in 1 parent, deterioration in 4 parents,											
111	missing data for 1 parent											

113	**CERQ Maladaptive**											
114	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
115	Mean pre	19	19	36	21	20	17	28	22	16	12	15
116	Mean post	16	16	17	24		17	21	14	15	15	16
117	SD pre	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62
118	Cronbach alpha	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
119	SEM	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496
120	Sdiff	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009
121	Pre-post change	3	3	19	-3		0	7	8	1	-3	-1
122	RC value	0.777184	0.777184	4.922165	-0.77718		0	1.813429	2.07249	0.259061	-0.77718	-0.25906
123	RESULTS: reliable improvement in 2 parents; improvement in 4 parents, no change in 1 parent, deterioration in 3 parents,											
124	missing data for 1 parent											
125												
126	**PAAQ**											
127	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
128	Mean pre	58	42	73	66	60	47	56	50	63	46	68
129	Mean post	49	40	59	45		36	23	57	53	41	55
130	SD pre	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49
131	Cronbach alpha	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
132	SEM	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562
133	Sdiff	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814
134	Pre-post change	9	2	14	21		11	33	-7	10	5	13
135	RC value	5.71496	1.269991	8.889937	13.33491		6.984951	20.95485	-4.44497	6.349955	3.174978	8.254942
136	RESULTS: reliable change in 8 parents, improvement in 1 parent; reliable deterioration in 1 parent, 1 missing data											
138	**PABUA**											
139	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
140	Mean pre	32	22	38	20	25	24	38	23	27	28	44
141	Mean post	34	20	27	23		25	15	22	30	26	35
142	SD pre	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
143	Cronbach alpha	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
144	SEM	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409
145	Sdiff	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978
146	Pre-post change	-2	2	11	-3		-1	23	1	-3	2	9
147	RC value	-0.39565	0.39565	2.176073	-0.59347		-0.19782	4.549971	0.197825	-0.59347	0.39565	1.780423
148	RESULTS: 2 parents reliably improved; 4 parents improved; 4 deteriorated; 1 missing data											
149												
150	**CBCL School Internalizing**											
151	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
152	Mean pre		12	22	19	9	9	28		5	13	
153	Mean post		11	16	18		9	7		10	12	
154	SD pre		7.73	7.73	7.73	7.73	7.73	7.73		7.73	7.73	
155	Cronbach alpha		0.83	0.83	0.83	0.83	0.83	0.83		0.83	0.83	
156	SEM		3.187161	3.187161	3.187161	3.187161	3.187161	3.187161		3.187161	3.187161	
157	Sdiff		4.507326	4.507326	4.507326	4.507326	4.507326	4.507326		4.507326	4.507326	
158	Pre-post change		1	6	1		0	21		-5	1	
159	RC value		0.221861	1.331166	0.221861		0	4.659082		-1.10931	0.221861	
160	RESULTS: reliable improvement in 1 parent; improvement in 4 parents, no change in 1 parent, deterioration in 1 parent,											
161	missing data for 1 parent (n=8)											

163	**CBCL Preschool internalizing**											
164	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
165	Mean pre	8							19			20
166	Mean post	10							25			11
167	SD pre	6.66							6.66			6.66
168	Cronbach alpha	0.84							0.84			0.84
169	SEM	2.664							2.664			2.664
170	Sdiff	3.767465							3.767465			3.767465
171	Pre-post change	-2							-6			9
172	RC value	-0.53086							-1.59258			2.388874
173	RESULTS: reliable improvement in 1 parent; deterioration in 2 parents (n = 3)											

Pre-follow up program

	A	B	C	D	E	F	G	H	I	J	K	L
1	**IMP Total**											
2	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
3	Mean pre	98	115	74	93	89	107	83	96	78	101	99
4	Mean fup	111	121	83			117	127	114	91	108	107
5	SD pre	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28	12.28
6	Cronbach alpha	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
7	SEM	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983	3.248983
8	Sdiff	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755	4.594755
9	Pre-fup change	-13	-6	-9			-10	-44	-18	-13	-7	-8
10	RC value	-2.82931	-1.30584	-1.95876			-2.17639	-9.57614	-3.91751	-2.82931	-1.52348	-1.74112
11	RESULTS: reliable improvement in 6 parents; improvement in 3 parents, missing data for 2 parent											
12												
13	**IMP LFA**											
14	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
15	Mean pre	15	18	16	16	17	14	13	13	13	16	20
16	Mean fup	21	20	17			18	20	16	15	17	21
17	SD pre	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
18	Cronbach alpha	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
19	SEM	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588	1.190588
20	Sdiff	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746	1.683746
21	Pre-fup change	-6	-2	-1			-4	-7	-3	-2	-1	-1
22	RC value	-3.56348	-1.18783	-0.59391			-2.37566	-4.1574	-1.78174	-1.18783	-0.59391	-0.59391
23	RESULTS: reliable improvement in 3 parents; improvement in 6 parents, missing data 2 parents											
24												
25	**IMP CC**											
26	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
27	Mean pre	29	30	17	27	21	24	23	26	17	24	25
28	Mean fup	30	27	18			27	30	30	19	24	24
29	SD pre	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28
30	Cronbach alpha	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
31	SEM	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455	1.353455
32	Sdiff	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074	1.914074
33	Pre-fup change	-1	3	-1			-3	-7	-4	-2	0	1
34	RC value	-0.52245	1.567337	-0.52245			-1.56734	-3.65712	-2.08978	-1.04489	0	0.522446
35	RESULTS: reliable improvement in 2 parents; improvement in 4 parents, no change in 1 parents,											
36	deterioration in 2 parents; missing data for 2 parents											
37												
38	**IMP NJAPF**											
39	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
40	Mean pre	16	24	12	13	17	25	13	19	16	22	12
41	Mean fup	20	25	15			25	24	26	18	24	17
42	SD pre	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
43	Cronbach alpha	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
44	SEM	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667	1.839667
45	Sdiff	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682	2.601682
46	Pre-fup change	-4	-1	-3			0	-11	-7	-2	-2	-5
47	RC value	-1.53747	-0.38437	-1.1531			0	-4.22803	-2.69057	-0.76873	-0.76873	-1.92183
48	RESULTS: reliable improvement in 2 parents; improvement in 6 parents, no change in 1 parent, missing data for 2 parents											
49												
50	**IMP EAC**											
51	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
52	Mean pre	11	12	10	9	9	13	10	10	11	9	11
53	Mean fup	11	12	11			14	15	10	12	9	12
54	SD pre	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
55	Cronbach alpha	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
56	SEM	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242	0.718242
57	Sdiff	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747	1.015747
58	Pre-fup change	0	0	-1			-1	-5	0	-1	0	-1
59	RC value	0	0	-0.9845			-0.9845	-4.92249	0	-0.9845	0	-0.9845
60	RESULTS: reliable improvement in 1 parent; improvement in 4 parents, no change in 4 parents, missing data for 2 parents											

62	**IMP EAS**											
63	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
64	Mean pre	13	13	9	12	10	13	10	11	9	13	13
65	Mean fup	15	15	9			15	17	15	11	14	13
66	SD pre	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69
67	Cronbach alpha	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
68	SEM	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654	0.736654
69	Sdiff	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786	1.041786
70	Pre-fup change	-2	-2	0			-2	-7	-4	-2	-1	0
71	RC value	-1.91978	-1.91978	0			-1.91978	-6.71923	-3.83956	-1.91978	-0.95989	0
72	RESULTS: reliable improvement in 2 parents; improvement in 5 parents, no change in 2 parents, missing data for 2 parents											

74	**IMP ENRP**											
75	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
76	Mean pre	14	18	10	16	15	18	14	17	12	17	18
77	Mean fup	14	22	13			18	21	17	16	20	20
78	SD pre	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66
79	Cronbach alpha	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
80	SEM	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798	0.798
81	Sdiff	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542	1.128542
82	Pre-fup change	0	-4	-3			0	-7	0	-4	-3	-2
83	RC value	0	-3.54439	-2.6583			0	-6.20269	0	-3.54439	-2.6583	-1.7722
84	RESULTS: reliable improvement in 5 parents; improvement in 1 parent, no change in 3 parents, missing data 2 parents											

86	**PSS**											
87	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
88	Mean pre	41	38	47	54	44	41	38	42	50	47	47
89	Mean fup	36	32	30			31	26	35	40	42	34
90	SD pre	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05
91	Cronbach alpha	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
92	SEM	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005	2.575005
93	Sdiff	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607	3.641607
94	Pre-fup change	5	6	17			10	12	7	10	5	13
95	RC value	1.37302	1.647624	4.668269			2.746041	3.295249	1.922228	2.746041	1.37302	3.569853
96	RESULTS: 5 parents reliably improved; 4 improved; 2 data missing											
97												
98	**CERQ Adaptive**											
99	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
100	Mean pre	19	27	19	29	23	17	31	19	17	28	18
101	Mean fup	32	27	18			25	34	29	17	18	25
102	SD pre	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32	5.32
103	Cronbach alpha	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
104	SEM	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678	2.712678
105	Sdiff	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307	3.836307
106	Pre-fup change	-13	0	1			-8	-3	-10	0	10	-7
107	RC value	-3.38868	0	0.260667			-2.08534	-0.782	-2.60667	0	2.606674	-1.82467
108	RESULTS: reliable improvement in 3 parents; improvement 2 parents, no change 2 parent, deterioration 1 parent,											
109	reliable deterioration 1 parent, missing data 2 parents											

111	**CERQ Maladaptive**											
112	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
113	Mean pre	19	19	36	21	20	17	28	22	16	12	15
114	Mean fup	20	19	16			15	16	15	16	17	14
115	SD pre	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62	6.62
116	Cronbach alpha	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
117	SEM	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496	2.729496
118	Sdiff	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009	3.86009
119	Pre-fup change	-1	0	20			2	12	7	0	-5	1
120	RC value	-0.25906	0	5.181226			0.518123	3.108736	1.813429	0	-1.29531	0.259061
121	RESULTS: reliable improvement in 2 parents; improvement in 3 parents, no change in 2 parent, deterioration in 2 parents,											
122	missing data 2 parents											

124	**PAAQ**											
125	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
126	Mean pre	58	42	73	66	60	47	56	50	63	46	68
127	Mean fup	48	36	50			46	28	43	53	50	53
128	SD pre	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49
129	Cronbach alpha	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
130	SEM	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562	1.113562
131	Sdiff	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814	1.574814
132	Pre-fup change	10	6	23			1	28	7	10	-4	15
133	RC value	6.349955	3.809973	14.6049			0.634996	17.77987	4.444969	6.349955	-2.53998	9.524933
134	RESULTS: reliable change in 7 parents, improvement in 1 parent; reliable deterioration in 1 parent, 2 missing data											
135												
136	**PABUA**											
137	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
138	Mean pre	32	22	38	20	25	24	38	23	27	28	44
139	Mean fup	33	24	33			24	11	16	26	20	42
140	SD pre	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
141	Cronbach alpha	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
142	SEM	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409	3.574409
143	Sdiff	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978	5.054978
144	Pre-fup change	-1	-2	5			0	27	7	1	8	2
145	RC value	-0.19782	-0.39565	0.989124			0	5.34127	1.384774	0.197825	1.582598	0.39565
146	RESULTS: 1 parent reliably improved; 5 parents improved; 2 deteriorated; 1 no change; 2 missing data											

148	**CBCL School Internalizing**										
149	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
150	Mean pre		12	22	19	9	9	28		5	13	
151	Mean fup		3	15			9	9		8	13	
152	SD pre		7.73	7.73	7.73	7.73	7.73	7.73		7.73	7.73	
153	Cronbach alpha		0.83	0.83	0.83	0.83	0.83	0.83		0.83	0.83	
154	SEM		3.187161	3.187161	3.187161	3.187161	3.187161	3.187161		3.187161	3.187161	
155	Sdiff		4.507326	4.507326	4.507326	4.507326	4.507326	4.507326		4.507326	4.507326	
156	Pre-fup change		9	7			0	19		-3	0	
157	RC value		1.996749	1.553027			0	4.21536		-0.66558	0	
158	RESULTS: reliable improvement in 2 parents; improvement in 1 parents, no change in 2 parent, deterioration in 1 parent, missing data											
159	2 parents (n=8)											
160												
161	**CBCL Preschool internalizing**											
162	Subjects:	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11
163	Mean pre	8							19			20
164	Mean fup	10							19			16
165	SD pre	6.66							6.66			6.66
166	Cronbach alpha	0.84							0.84			0.84
167	SEM	2.664							2.664			2.664
168	Sdiff	3.767465							3.767465			3.767465
169	Pre-fup change	-2							0			4
170	RC value	-0.53086							0			1.061722
171	RESULTS: improvement in 1 parent; no change in 1 parent; deterioration in 1 parent (n=3)											