Callous-Unemotional Traits, Negative Parenting Practices and Conduct Problems in Singaporean Families

Khai Imm Sng

School of Psychology
Faculty of Science
The University of Sydney

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CERTIFICATION BY CANDIDATE

This thesis is submitted to the University of Sydney in fulfilment of the requirements for the Doctor of Clinical Psychology / Masters of Science degree. I hereby declare that to the best of my knowledge, the content of this thesis is my own work and contains no material that has been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all assistance from others in preparing this thesis have been acknowledged.

Khai Imm Sng 31 March 2017

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AUTHOR ATTRIBUTION STATEMENT

None of the chapters in this thesis has been published or submitted for publication. However, Chapters 2 and 3 of this thesis are being prepared for publication.

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ABSTRACT

Research into callous-unemotional traits is largely limited to studies in Western countries (e.g., Waller, Gardner & Hyde, 2013). Three studies were thus conducted to examine CU traits in Asian culture. The first study reviewed existing research on CU traits in Asian countries based on key findings from Western countries: if CU traits in Asia were associated with increased severity of conduct problems, neurodevelopmental/emotion-related correlates, environmental risk factors and treatment outcomes. Findings from 15 samples provided some evidence of similar risk processes between Asian and Western samples, but also indicated some differences, e.g., associations between CU traits and anxiety or peer influence.

In the second study, it was predicted that CU traits would moderate the associations between negative parenting and child aggression in a sample of clinic-referred children, based on findings of Yeh, Chen, Raine, Baker and Jacobson (2011) and differences in heritability of conduct problems between children with high and low CU traits (e.g., Dadds et al., 2006). Psychological aggressive parenting was associated with reactive and proactive aggression. Physically aggressive parenting was more strongly associated with proactive aggression among low-CU children than high-CU children.

In the third study, it was predicted that there would be moderate stability of CU traits based on findings of genetic influence on CU traits (e.g., Viding et al., 2005) and bidirectional associations between CU traits and negative parenting. Contrary to predictions, our sample of clinic-referred children showed low stability of CU traits over a six-year period, and no bidirectional link between CU traits and negative parenting. Only parental psychological aggression predicted changes in CU
traits. These findings raise the need for ongoing research into CU traits in Asian cultures.
CHAPTER 1

INTRODUCTION
Overview of Present Research

Persistent childhood conduct problems have been associated with substantial social and economic cost, and a broad range of mental health problems later in life (Kim-Cohen et al., 2009; Romeo, Knapp & Scott, 2006). It is now understood that children with such problems may follow heterogeneous risk pathways characterized by somewhat distinct causal processes. One particularly influential model of these pathways distinguishes between children with conduct problems characterized by low versus high levels of callous-unemotional (CU) traits. CU traits refer to a lack of guilt or remorse, lack of empathy or concern for others’ feelings, lack of concern about performance in important activities and shallow affect. It corresponds to the affective dimension of psychopathy and now appears in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; APA, 2013) as a specifier for conduct disorders (termed “limited prosocial emotions”). Evidence concerning the clinical importance of CU traits in children and adolescence has grown considerably in recent decades. Research has found that children with high compared to low CU traits follow different developmental trajectories (see review by Frick et al., 2014). While a large body of research on the influences of CU traits has examined child-driven factors (e.g., Dadds et al., 2012; Pardini, Lochman & Frick, 2003), research in recent years has also started to examine the role of parenting in the development of CU traits (see review by Waller et al., 2013). In particular, CU traits appear to moderate the relation between harsh parenting and conduct problems, with negative parenting being found in a number of studies to be associated with conduct problems in children with low CU traits only (e.g., Oxford, Cavell & Hughes, 2003). Research has also found some evidence for a positive association between harsh and coercive
parenting, and CU traits (e.g., Frick et al., 2003b), as well as bidirectional dynamics between CU traits and parenting (e.g., Hawes et al., 2011).

However, there are two main limitations to the existing research. First, findings are not consistent across all studies (e.g., Falk & Lee, 2011; O’Connor et al., 2016). A possible explanation for these discrepant findings is that the association may differ based on the distinct form of parenting or child outcome measured, e.g. parental psychological aggression and physical aggression (McDonald et al., 2011). Second, research has been largely limited to the Western culture and there is a paucity of studies on CU traits in Asian culture. It is thus unclear if findings on CU traits generalise across diverse cultures, especially considering findings of cross-cultural differences for parenting and conduct problems (e.g., Deater-Deckard et al., 1996), and emerging evidence of cross-cultural variations of CU traits (Fung, Gao & Raine, 2009).

The theoretical basis for the thesis was thus based on a comprehensive review of existing studies of CU traits (e.g., Dadds, et al., 2005; Hipwell et al., 2007). The main objectives of the thesis were to test whether key associations of CU traits previously identified in Western countries generalize to Asian countries, and to examine the interplay between CU traits, conduct problems and parenting practices in Singaporean families using specific domains of parenting practices and antisocial behaviours, namely parental psychological aggression versus physical aggression, and reactive versus proactive aggression. Three studies constitute this thesis.

The aim of the first paper was to provide a systematic review of existing research regarding CU traits and their correlates in Asian countries, so as to understand the availability of research on CU traits in Asian countries, and examine similarities and differences between findings in Asian versus Western countries. This
is currently not well understood as reviews on CU traits have predominantly reported on findings from Western countries (e.g., Waller et al., 2013), Based on key findings from research in Western countries, finding from this research are addressed in relation to four key questions regarding the extent to which CU traits among Asian children and adolescents have been associated with (1) increased severity of conduct problems; (2) distinct neurodevelopmental and emotion-related correlates; (3) distinct environmental risk factors; and (4) distinct treatment outcomes. The psychometric performance of CU traits measures in these samples was also of interest. Findings from this study will thus provide a better understanding of cross-cultural differences with respect to CU traits.

The main aim of the second study is to determine if available findings from Western culture on the association between CU traits, parenting practices and child aggression (McDonald et al., 2011; Yeh et al., 2011) generalise to a Singaporean sample. There are two hypotheses based on past studies on CU traits and parenting, and evidence that suggest differences in heritability of conduct problems and emotional dispositions between children with high and low CU traits (e.g., Dadds et al., 2006; Viding & McCrory, 2012), First, it was hypothesised that parental physical aggression (mild and severe) and psychological aggression would each be associated with conduct problem severity in Singapore children. Second, it was hypothesized that CU traits would moderate associations between dimensions of negative parenting and child aggression, and that this interplay would differ across reactive versus proactive forms. Other than being the first Asian study to investigate the role of CU traits as a moderator in the association between parenting and conduct problems, the current study is also novel as it is the first study to examine this association in a
sample with clinic-referred externalizing problems, and the first to incorporate both physical and psychological parental aggression.

The third study aimed to investigate if existing findings from Western culture on stability of CU traits, and bidirectional associations between CU traits and negative parenting, generalize to a Singaporean sample, and to explore the association using specific dimensions of harsh parenting. There are two hypotheses. First, based on previous findings of CU traits in Western samples, including a genetic influence on CU traits (e.g., Dadds, Fraser, Frost & Hawes, 2005; Viding et al., 2005), it was hypothesized that CU traits would remain moderately stable over a period of six years. Second, based on evidence of bidirectional associations between CU traits and negative parenting (e.g., Salihovic et al., 2012) and consistent with findings of an evocative gene-environment correlation that is involved in the development of CU traits (Larsson et al., 2008), it was hypothesized that there would be bidirectional dynamics between CU traits and negative parenting, measured by psychological aggression and physical punishment. The study is novel as it is the first study to examine the bidirectional relationship between CU traits and parental psychological aggression.

The thesis begins with an overview of relevant literature on conduct problems and CU traits (Chapter 1), followed by three chapters (Chapters 2 – 4) that detail the three studies that constitute this thesis. The thesis ends with a discussion of theoretical and clinical implications of the research findings (Chapter 5).

The following sections in this chapter provide a background on conduct problems including the established relationship between parenting and conduct problems, as well as evidence of cross-cultural differences in this area. This is followed by the introduction of CU traits as a way to subgroup children with early-
onset conduct problems and the available research on CU traits in the literature, with a focus on research that examined the associations between CU traits and negative parenting.

**Childhood Conduct Problems**

Conduct problems refer to problems behaviours that infringe the rights of others and/or lead to conflict with societal norms or authority figures (American Psychiatric Association [APA], 2013). They are associated with the diagnosis of conduct disorder (CD), which includes behaviours such as aggression and violation of rules, and oppositional defiant disorder (ODD), which is a common precursor to conduct disorder, and includes behaviours such as argumentative/defiant behaviour. Studies have reported the point prevalence rates of ODD and CD to be between 2 to 16%, with higher prevalence among boys than girls (e.g., Kessler, Chiu, Demler & Walters, 2005; López-Villalobos et al., 2014; Maughan, Rowe, Messer, Goodman, & Meltzer, 2004). Childhood conduct problems have also been associated with various social, emotional and academic problems, as well as later antisocial behaviour, and are identified as the childhood psychopathology that incurred the highest cost for psychological, psychiatric and social services. For instance, Kim-Cohen et al (2009) conducted a study with children as young as ages four and five, and found that serious conduct problems predicted significant behavioural, emotional, social and educational difficulties five years later. Scott, Knapp, Henderson and Maughan (2001) calculated that by age 28, individuals with conduct disorder incurred costs that were 10 times higher than those with no problems, and 3.5 times higher than those with conduct problems. The importance of identifying risk factors for prevention and treatment of conduct problems is thus apparent.
**Family Influences of Conduct Problems**

From a developmental-ecological perspective, conduct problems are understood to be highly embedded in the multiple systems (e.g., family, school) that are part of a child’s environment, and the parent-child interaction is recognized to be the most important environmental influence of child conduct problems (Hawes & Dadds, 2005). A wide range of research has examined, and found support, for the effects of parenting on child outcomes (e.g., Gershoff, 2002; Gershoff & Grogan-Kaylor, 2016; Hoeve et al., 2009). For instance, Hoeve et al (2009) conducted a comprehensive meta-analysis on the relationship between various parenting dimensions and delinquency, and reported the consistent finding that parenting was significantly associated with delinquency. In a long-term study of 411 boys, harsh parenting was similarly linked to increased levels of conduct problems (Farrington, 2003).

Measurement studies have further distinguished between different dimensions of harsh parenting and their associations with child outcomes (e.g., Feigelman et al., 2009). For instance, corporal punishment is differentiated into mild corporal punishment that involves the use of physical force to inflict mild pain (e.g., spanking, and slapping), and severe physical punishment that causes considerable pain and inflicts injury (e.g., physical assault) (Straus & Stewart, 1999). There is empirical evidence that both mild corporal punishment and severe physical punishment are each related to distinct psychopathologies later in life, such as externalizing behaviours and alcohol abuse/dependence (e.g., Afifi, Brownridge, Cox & Sareen, 2006). Other than corporal punishment, another aspect of harsh parenting is psychological aggression,
which is defined as communication that is intended to inflict psychological pain, e.g., screaming, cursing and verbal threats (Vissing, Straus, Gelles, & Harrop, 1991). While psychological aggression often co-occurs with corporal punishment (Claussen & Crittenden, 1991), research has reported a distinct association between parental psychological aggression and poor child outcomes, which include anger-irritability and depression (e.g., Teicher, Samson, Polcari, & McGreenery, 2006). There is also some evidence that psychological aggression may be more damaging than other forms of parenting (e.g., Claussen & Crittenden, 1991; Crittenden, Claussen & Sugarman, 1994; Hart, Binggeli & Brassard, 1998; Ney, 1987). For instance, Miller-Perrin, Perrin and Kocur (2009) reported in a retrospective study that psychological aggression was the best predictor of psychological outcomes when demographic variables and frequency of parent aggression variables were considered simultaneously.

There is also research that provided evidence of child-to-parent effects whereby child behaviours influence parenting practices. Burke, Pardini and Loeber (2008) conducted a study that found that not only did timid discipline (which refers to parents’ reluctance to apply disciplinary measures because of concerns that child will respond negatively) predict child conduct problems, but child conduct problems also predicted changes in child conduct problems. Such reciprocal influences between child behaviours and parenting have been replicated in other studies (e.g., Brown, Grandero & Ezepeleta, 2017). These findings provided support for the Coercion Theory originally formulated by Patterson (1982), which described a reciprocal relationship between parenting and child conduct problems, whereby both parent and child are involved in reinforcement traps that are maintained by escape-avoidance conditioning. For instance, a child may behave negatively towards an instruction from
the parent, inducing anger and an aggressive reaction from his parent. The parent is thus modelling aggressive behaviours, and both the child and his parent may become stuck in a “reinforcement trap”, whereby the coercion cycle escalates as both parties use increasingly coercive strategies until one person yields. Coercive behaviours are thus negatively reinforced. As the frequency of these coercion cycles increases, the parent may become increasingly harsh and inconsistent. The child thus learns from these family interactions about the use of aggressive strategies, and behaves similarly in other settings, such as with peers in school. Existing parent management training for conduct problems have been largely informed by these coercive parent-child processes, and aim to replace these coercive parenting practices with firm, effective discipline and positive reinforcement (Sanders & Dadds, 1993; Webster-Stratton & Hancock, 1998).

**Cross-Cultural Perspectives on Conduct Problems and Parenting Practices**

There is thus a large volume of research on conduct problems in the literature. However, existing research is predominantly based in Western countries. Differences in cross-cultural studies raise questions about how much of the existing findings generalize across diverse cultures. For instance, Crijnen, Achenbach and Verhulst (1997) conducted a cross-cultural study of 12 countries (Australia, Belgium, China, Germany, Greece, Israel, Jamaica, Netherlands, Puerto Rico, Sweden, Thailand and United States) and reported small but significant effect size for culture on parent-reported delinquent behaviour and aggressive behaviour syndromes using the Child Behaviour Checklist (Achenbach, 1991). Specifically, Sweden and Israel scored significantly lower than the overall mean score on the delinquent behaviour
syndrome, while Puerto Rico and United States scored significantly higher. In another cross-cultural study of seven countries on youth self-report of problem behaviours using the Youth Self-Report (Achenbach, 1991), Verhulst et al (2003) similarly reported cross-cultural differences. A significant effect size for culture on youth-reported delinquent behaviour and aggressive behaviour syndromes was found. Specifically, China, Israel and Turkey scored significantly lower than the overall mean score on the delinquent behaviour syndrome, while Australia, Netherlands and United States scored significantly higher. For the aggressive behaviour syndrome, Jamaica and Turkey scored significantly lower, while Australia, China and United States scored higher than the overall mean. The researchers speculated that cultural differences may be due to different prevalence rates, different thresholds for reporting problem behaviours, or language differences.

Differences in parenting practices have also been found in different cultures. 52 countries have officially banned parents’ use of corporal punishment since Sweden became the first country to do so in 1979 (States which have prohibited all corporal punishment, n.d.). In contrast, some cultures, such as the Chinese culture value strict parenting and as a result tend to employ greater use of physical punishment, even during adolescence (Simons, Wu, Lin, Gordon & Conger, 2000). Research has also found that Chinese parents are higher in authoritarian parenting and lower in authoritative parenting, as compared to European American parents (e.g., Chao, 1994; Lin & Fu, 1990), as well as in directiveness, physical coercion and shaming/love withdrawal (Lansford et al, 2005). Additionally, Lansford et al (2010) collected data from parents on their use of corporal punishment in the past one month and found different prevalent rates of corporal punishment across different countries. 48% of parents from China used mild corporal punishment on their daughters, while 60%
used mild corporal punishment on their sons. More than 70% of parents from Philippines admitted to the use of mild corporal punishment on their children in the past one month. In contrast, less than 40% of parents from United States and less than 10% of parents from Sweden had used mild corporal punishment on their children.

Huang, Cheah, Lamb and Zhou (2017) further reported that Taiwanese mothers used more authoritarian parenting when compared to Chinese immigrant mothers in the United States.

**Cross-Cultural Perspectives on Family Influences of Conduct Problems**

There are also studies that reported differences in the association between parenting and child outcomes in different cultures. Lansford et al (2014) found that while corporal punishment was associated with increases in mother-reported child aggression over time in an overall analysis of participants from eight countries, the effect varied significantly by country. Specifically, no significant association was reported in any of the Asian countries in the study, namely China, Philippines and Thailand. In a review of cultural differences on the effects of corporal punishment within American samples, Lansford (2010) reported a range of findings when comparing between European Americans and African American families. While studies generally reported a significant association between corporal punishment and conduct problems for European Americans, findings for African Americans and Hispanics were mixed. For instance, longitudinal studies reported that spanking and physical discipline related to more aggression in European American children but less aggression in African American children (e.g., Gunnoe & Mariner, 1997; Lansford, Deater-Deckard, Dodge, Bates & Pettit, 2004). In another longitudinal study, corporal
punishment before age 2 was significantly associated with conduct problems at school age for white non-Hispanic children but no significant association was found for African American or Hispanic children (Slade & Wissow, 2004). Deater-Deckard et al (1996) also reported a positive relation between punishment and aggression for European American children but not for African American children.

Based on these findings, researchers have proposed that cross-cultural differences may be dependent on how acceptable the coercive parenting is in the culture, and the perceptions that children may have towards the form of parenting (e.g., Lansford et al., 2005). Specifically, children who view harsh parenting as unacceptable will be more likely to react negatively to harsh parenting and develop negative outcomes. Consistent with this suggestion, corporal punishment was found to be more acceptable and more commonly used among African Americans, than European Americans (Flynn, 1998), and this may explain findings of weaker associations between harsh parenting and behaviour problems in African American families than European American families (e.g., Lansford et al., 2004). Simons et al (2002) further found a weaker association between corporal punishment and child conduct problems when there is higher prevalence of corporal punishment in the community. In a study of mother-child dyads from China, India, Italy, Kenya, the Philippines and Thailand, Lansford et al (2005) similarly reported that weakest associations between physical discipline and child behaviour problems were demonstrated in countries in which physical discipline was most culturally acceptable. Specifically, the rank order (from low to high) of the strength of association between physical discipline and child aggression was Kenya, India, Italy, Philippines, China and Thailand. There is thus evidence to suggest the relevance of considering cultural differences in the association between parenting practices and conduct problems.
Heterogeneity among Children with Conduct Problems and Callous-Unemotional Traits

While we consider findings from cross-cultural research on conduct problems, it is also important to understand the significant developments in research on conduct problems in recent years. In particular, extensive research over the years has led to the agreement that children with conduct problems are a highly heterogeneous group, with great variability in symptom presentations and risk pathways (Frick & Viding, 2009). This gave rise to research that attempted to classify conduct problems into meaningful subgroups, which can guide etiological research and development of effective treatment approaches (Moffitt et al., 2008). This included differentiating children with conduct problems by the types of behaviours displayed (e.g., overt or covert), whether physical aggression is involved, and presence of co-morbid disorders such as Attention Deficit Hyperactivity Disorder (ADHD). For instance, a distinction between proactive and reactive aggression was shown in a meta-analysis that included 51 studies (Polman, de Castro, Koops, van Boxtel, & Merk, 2007). Proactive aggression is goal-directed, reward-focused, instrumental aggression, whereas reactive aggression occurs in response to perceived provocation and is related to anger (Dodge, Lochman, Harnish, Bates, & Pettit, 1997). In terms of social-cognitive processing, reactive aggression is associated with hostile attribution bias while proactive aggression is associated with positive evaluation of the use and outcome of aggressive behaviour (Crick & Dodge, 1996). Reactive aggression is also associated with impulsivity and anxiety, physically abusive parenting, and a lack of close friends, while proactive aggression is associated with poor peer relationships, hyperactivity and poor social background (Dodge et al., 1997; Ford, Fraleigh, &
Moreover, proactive aggression is a predictor of later delinquency and violence, and antisocial behaviour in adulthood, but not reactive aggression (Fite, Raine, Stouthamer-Loeber, Loeber, & Pardini, 2010; Vitaro, Gendreau, Tremblay, & Oligny, 1998).

Another approach, and the most established model, differentiates between children whose conduct problems emerge in childhood (childhood-onset), and those whose conduct problems emerge later in adolescence (adolescent-onset) (Moffitt, 1993). For instance, the childhood-onset group is known to be particularly persistent and severe in antisocial behaviour (Moffitt, Caspi, Harrington & Milne, 2002). Temperamental and personality risk factors (Silverthorn, Frick & Reynolds, 2001), neuropsychological and cognitive deficits (Fergusson, Lynskey, & Horwood, 1996), as well as emotion regulation difficulties (Moffitt, 2006) have also been found to characterise the childhood-onset group. There are also findings that the childhood-onset group tends to come from homes with greater family instability, more family conflict, and with parents who use less effective parenting strategies (Odgers et al., 2008). However, research over the years also identified inadequacies within this childhood-onset versus adolescent-onset model, whereby significant variability was found even within the childhood-onset subgroup in terms of etiology (Frick & Viding, 2009) and outcome (Odgers et al., 2008). For instance, Odgers et al (2008) reported that a significant portion of youths with childhood-onset conduct problems desist from crime by early adulthood. There were also differences between children with childhood-onset conduct problems that were not accounted for in the model, such as differences in temperament and personality (Lynam, 1997). These limitations thus prompted research to further refine the sub-classification to identify more homogenous subgroups of youths.
A particularly influential model in recent years involves the subgrouping of early-onset conduct problems based on high versus low levels of callous-unemotional (CU) traits. Studies have found that the estimated prevalence of high CU traits in youths with conduct disorder range from 10 to 46% in community samples, to 21 to 59% in clinic samples (Kahn, Frick, Youngstrom, Findling, & Youngstrom, 2012; Kolko & Pardini, 2010; Rowe, Costello, Angold, Copeland & Maughan, 2010).

Stability of CU traits has been shown in a number of studies (e.g., Barry, Barry, Deming & Lochman, 2008; Dadds et al., 2005; Frick et al., 2003a; van Baardewijk, Vermeiren, Stegge, & Doreleijers, 2011; Willoughby, Waschbusch, Moore & Propper, 2011). For instance, Frick et al (2003b) reported that the overall stability estimate for parent-reported CU traits in a sample of non-referred youths ranged from .71 to .86 across two to four years, with an overall stability estimate of .90 (p < .001) across all four assessments. Barry et al (2008) reported similar results in a sample of at-risk children aged 9-12, with a 3-year overall stability estimate of .83 (p < .001). In another sample of 780 children aged four to nine, Dadds et al (2005) reported moderate stability of CU traits over a period of 12 months (r = .55) in a community sample. Studies have also been conducted with younger children. For instance, Willoughby et al (2011) assessed the stability of CU traits in a group of 182 children at 36-month, and 60-month. They reported a large and significant latent correlation that represented the stability of CU traits across time (ADHD$\phi$ = .79, ODD$\phi$ = .69, CU$\phi$ = .84, all p <.001). Stability of CU traits was thus found to be relatively high, and comparable to that of ADHD and ODD even at a young age.

Distinct developmental outcomes were also associated with CU traits. In particular, children and adolescents with high CU traits were found to be at greater risk for severe and persistent antisocial behaviour as compared to those with low CU traits.
traits, even after controlling for co-occurring disruptive behaviour disorder symptoms. In a comprehensive review by Frick et al (2014), 89% of studies found evidence for a significant association between CU traits and antisocial or aggressive behaviours, with an average correlation of 0.33 (e.g., Basque, Toupin & Cote, 2012; Kahn et al., 2012; Pardini, Stepp, Hipwell, Stouthamer-Loeber & Loeber, 2012). Furthermore, CU traits were associated with later antisocial behaviours, even after controlling for initial conduct problem severity (e.g., Sevecke, Kosson & Krischer, 2009). For instance, Byrd, Loeber and Pardini (2012) examined CU traits in a community sample (N = 503) and reported that CU traits at age seven predicted antisocial behaviour at age 25, even after controlling for initial ODD, CD and ADHD. These findings were replicated by Longman, Hawes and Kohlhoff (2015), who conducted a meta-analysis of 10 studies comprising 5,731 participants. They found a significant positive relationship between CU traits and conduct problem severity for children below the age of five, in the order of large effect size, and this relationship was consistent across sex and sample type (at risk/clinic-referred, or community) (e.g., Hyde et al., 2013; Somech & Elizur, 2012b; Willoughby, Mills-Koonce, Gottfredson & Wagner, 2014).

CU traits were also associated with poorer treatment outcomes. Hawes et al (2014) conducted a review that included 16 treatment outcome studies and reported that there was strong evidence for a unique association between CU traits and risk for poor treatment outcomes. For instance, Manders, Dekovic, Asscher, van der Laan and Prins (2013) conducted a randomized controlled trial to investigate the effectiveness of multi-systemic therapy (MST) as compared to treatment-as-usual (TAU; individual and family therapy). MST was reported to more effectively reduce conduct problems among youths with low CU traits, as compared to those with high CU traits. Similarly, Dadds et al (2012) reported an increase in conduct problems following
treatment for a group of children with high CU traits, while no such outcome was shown for the group with low CU traits. Nonetheless, there is also evidence that intensive and tailored treatment can reduce conduct problems for children with high CU traits (e.g., Kolko & Pardini, 2010). Additionally, a few studies have reported that CU traits respond to treatment (e.g., Hawes & Dadds, 2007; Kolko et al., 2009; McDonald et al., 2011; Somech & Elizur, 2012b.) For instance, Hawes and Dadds (2007) reported that a subset of their sample showed a reduction in CU traits from pre-treatment to post-treatment and 6-month follow-up. Kolko et al (2009) found that there was a reduction in teacher-reported CU traits post-intervention, and this was maintained across a 3-year follow-up period for children in both arms of their study (community vs. clinic-delivered). McDonald et al (2011) also reported a greater reduction in psychopathic traits in its treatment group.

In addition, research findings found that various causal factors underlie conduct problems found in children with CU traits, and these included emotional, cognitive, genetic and biological correlates. Key findings included an association between CU traits and abnormalities in the processing of punishment cues. Specifically, children with CU traits were found to be insensitive to punishment cues, especially when a reward-oriented response set was primed (e.g., Frick et al., 2003a). They also tended to underestimate the likelihood that they would be punished for misbehaviour (e.g., Pardini et al., 2003). Children and adolescents with severe conduct problems and elevated CU traits also endorsed more deviant values and goals in social situations, such as viewing aggression as a more acceptable means for obtaining goals (e.g., Pardini, 2011). In terms of emotional correlates, CU traits were associated with deficits in affective empathy (e.g., Dadds et al., 2012), and impairments in responsiveness and recognition of fear and sadness in others (e.g.,
Dadds et al., 2006). This may be related to deficits in attending to emotionally salient facial features and their tendency to make less eye contact with caretakers (Dadds et al., 2012), which may interfere with early moral socialization.

Among temperament and personality correlates, CU traits were most consistently related to lower levels of fear and anxiety (e.g., Roose, Bijttebier, Claes & Lilienfeld, 2011). For instance, Fanti, Panayiotou, Lazarou, Michael and Georgiou (2016) conducted a study involving 73 participants using questionnaires that assessed fearlessness, sensitivity to punishment and behavioural inhibition, as well as an experiment that assessed the children’s startle reactivity to fearful mental imagery. They found that children high on conduct problems and CU traits displayed fearlessness, in contrast to children with high/stable conduct problems and low CU traits who demonstrated high responsivity to fear, high behavioural inhibition and high sensitivity to punishment.

In terms of biological and genetic underpinnings, behavioural genetic research used twin studies and found moderate to high levels of heritability of CU traits (e.g., Viding & McCrory, 2012). Molecular genetic research also found evidence that the serotonergic system (Moul, Dobson-Stone, Brennan, Hawes & Dadds, 2013) and oxytocin receptor gene (Dadds et al., 2014a) were implicated. There was also evidence for abnormalities in brain regions, such as reduced right amygdala activity (Sebastian et al., 2012), and ventromedial prefrontal cortex (Blair et al., 2013), as well as grey matter volume differences (Sebastian et al., 2016). Children with high CU traits also showed reduced emotional reactivity to specific stimuli, such as heart rate change, skin conductance reactivity, cortisol reactivity (e.g., de Wied, van Boxtel, Matthys & Meeus, 2012). Mills-Koonce et al (2015) followed a birth cohort longitudinally from birth through to first grade and found no group differences in
children at six months of age. However, differences emerged at 15 months of age whereby children with later conduct problems and CU traits displayed greater high-intensity fear behaviour, higher pre-task and overall salivary cortisol levels, as well as lower levels of heart period and respiratory sinus arrhythmia, compared to children with conduct problems only, and children with no conduct problems. In addition, several recent studies have investigated potential genetic polymorphisms association with CU traits and findings suggest that CU traits were associated with polymorphisms, possibly of the Catechol O-methyltrasnferase (COMT) (Hirata, Zai, Nowrouzi, Beitchman & Kennedy, 2013) and oxytocin receptor (OSTR) genes (Dadds et al., 2014b).

CU Traits as Moderator of Parenting and Conduct Problems

Beyond studies on child-driven factors, there is increasing research on environmental risk processes associated with CU traits. This includes studies on parenting as well as peer risk factors. In particular, research into the association between parenting and CU traits has grown rapidly in recent years (see review by Waller et al., 2013). This may, in part, be driven by the prevalent use of parenting intervention in treatment for conduct problems, and a need to better inform clinicians about clinical strategies to employ with heterogeneous groups of children with conduct problems.

Firstly, studies have investigated whether high versus low levels of CU traits may influence the well-established association between parenting and conduct problems. Findings for positive parenting were mixed, with diverse finding reported in a range of studies. On one hand, studies have reported findings that parental warmth was more closely associated with conduct problems among children with high...
CU traits (e.g., Kroneman, Hipwell, Loeber, Koot & Pardini, 2011; Pasalich et al., 2011). In their study with clinic-referred boys with conduct problems (N = 95, 4-12 years old), Pasalich et al (2011) found that maternal warmth was significantly negatively associated with conduct problems in boys with high and medium levels of CU traits, but not in boys with low levels of CU traits. On the other hand, studies have reported that lower positive parenting were associated with conduct problems only for children with low levels of CU traits (e.g., Chinchilla & Kosson, 2016; Falk & Lee, 2011; Wootton, Frick, Shelton & Silverthorn, 1997). For instance, Falk and Lee (2011) conducted a study with 208 children aged six to nine years old. Controlling for ADHD, they found that children with low and average levels of CU traits showed a significant association between positive parenting (positive reinforcement and parental involvement) and parent-reported CD symptoms, whereas there was no such association for children with high CU traits. Yet in another study, Hipwell et al (2007) found that CU traits (low, mean or high) did not moderate associations between low parental warmth and conduct problems, after controlling for demographic characteristics.

A number of studies also investigated the moderating role of CU traits on the associations between negative parenting and conduct problems. Findings were more consistent, with the majority of studies showing that negative parenting was less proximal to the conduct problems of children with high, versus low levels of CU traits (e.g., Edens, Skopp, & Cahill, 2008; Fanti & Centifanti, 2014; Hipwell et al., 2007; Oxford et al., 2003; Pasalich et al., 2011; Wootton et al., 1997; Yeh et al., 2011). This may be because children with high CU traits are less responsive to punishment cues, and show reduced responses to negative stimuli. As a result, they may be less influenced by negative dimensions of parenting. For instance, Wootton et al (1997)
recruited 166 clinic-referred children between the ages of six and 13. Ineffective parenting was associated with greater conduct problems only for children with low levels of CU traits. In contrast, children with high levels of CU traits exhibited high rates of conduct problems, regardless of parenting experienced. Oxford et al (2003) conducted a study to replicate and extend Wootton et al (1997)’s study. Their study included 199 high-risk aggressive children in Grades Two and Three. Using dichotomous scores for CU traits, there was a significant interaction between CU traits and ineffective parenting in predicting peer-rated aggression. Specifically, the relation between ineffective parenting and peer-rated aggression was significant only for children with low CU traits, but not those with high CU traits. When continuous scores from the CU scale were used, ineffective parenting was significantly related to teacher-rated problem behaviour and peer-rated aggression only for children with low CU traits, and not for children with high CU traits. Edens et al (2008) also obtained similar findings. In a sample of male juvenile offenders (N = 76), harsh/inconsistent discipline predicted antisocial behaviour in children with low levels of CU traits, but not in those with high levels of CU traits. A limitation of the study is the use of adolescent self-report only. In their study with clinic-referred boys with conduct problems (N = 95, 4-12 years old), Pasalich et al (2011) coded coercive parenting from observation of family interaction while multiple informants rated CU traits and conduct problems. For both fathers and mothers, coercive parenting was significantly positively associated with conduct problems in boys with low levels of CU traits, but not in children with medium or high levels of CU traits.

Nonetheless, there were also studies that did not replicate the effect of CU traits as a moderator in the associations between negative parenting and conduct problems (e.g., Falk & Lee, 2011; Graziano et al., 2016; Kroneman et al., 2011;
O’Connor et al., 2016). For instance, Kroneman et al (2011) studied the five-year CD/ODD symptom trajectory in a community sample of girls aged seven to eight ($N = 1,233$). CU traits did not moderate the association between harsh punishment and CD/ODD symptom trajectory. Falk and Lee (2011) conducted a study with 208 children aged six to nine years old, and investigated whether CU traits moderated the association between parenting and conduct problems, controlling for ADHD. There was no significant interaction between corporal punishment and CU traits for parent-rated ODD or CD symptoms. A limitation of the study was the use of parent measures only. More recently, O’Connor et al (2016) collected data on 271 adolescents, and similarly found no evidence that CU traits moderate the association between parenting and conduct problems.

There are a few possible explanations for the discrepant findings. Firstly, it was speculated that there may be an age effect, whereby CU traits may moderate the relationship between parenting and conduct problems differently in children of different ages. Specifically, Waller et al (2015) speculated that children with CU traits may become increasingly sensitive to effects of punishment across development. As a result, CU traits may potentially moderate the relationship between negative parenting and conduct problems only in older children.

Additionally, findings may depend on the particular dimension of parenting, and particular dimension of child conduct problem measured. The likelihood of this is supported by a number of studies. Falk and Lee (2011) found that children with low and average levels of CU traits showed a significant association between positive parenting (positive reinforcement and parental involvement) and CD symptoms, whereas there was no such association for children with high CU traits. There was however no significant interaction between positive parenting and CU traits for ODD
symptoms. Crum, Waschbusch, Bagner and Coxe (2015) investigated the moderation effect of CU traits in a sample of 851 children aged between five and 12. Different dimensions of parenting (deficit monitoring, positive involvement, negative/ineffective discipline), and conduct problems (ODD, CD) were considered. CU traits were found to moderate the effect of negative/ineffective discipline on parent-report of ODD only. Namely, association between negative discipline and ODD symptoms was stronger at high levels of CU traits, versus low levels of CU traits. CU traits also moderated the effect of deficit monitoring on parent-report of CD only; there was a stronger positive association between deficient monitoring and CD at higher values of CU traits. In another study, Yeh et al (2011) conducted a large community-based twin study \(N=1,210\), aged 9-10). They reported that the association between parental affect and reactive aggression was significantly stronger for children with lower levels of childhood psychopathy, than children with higher levels of childhood psychopathic traits. In contrast, parental negative affect had significantly positive associations with proactive aggression at mean and high levels of childhood psychopathy, but not at low levels of psychopathy. These findings thus highlight the importance for future studies to further investigate the moderating role of CU traits in the association between parenting and conduct problems, with special consideration to the specific dimension of parenting and conduct problem measured.

**Transactional Dynamics between CU Traits and Parenting**

Beyond the research on CU traits as a moderator, a significant body of research has also investigated the direct association between parenting and CU traits, but results are not consistent. Firstly, studies on the association between CU traits and positive/warm parenting revealed mixed findings. On one hand, studies have found
that positive parenting did not predict CU traits over time (e.g., Barker, Oliver, Viding, Salekin & Maugham, 2011; Pardini & Loeber, 2008; Waller et al., 2012). For instance, Waller et al (2012) conducted a large longitudinal study with young children from a high-risk sample \((N = 731, \text{aged 2-4})\), and found that observed positive parenting did not predict later CU traits, after controlling for initial CU traits and demographic factors. On the other hand, there were studies that reported a significant negative association between positive parenting and CU traits (e.g., Clark & Frick, 2016; Fanti, Colins, Andershed & Sikki, 2017; Frick et al., 2003b; Hawes et al., 2011; Pardini et al., 2007). For instance, Fanti et al (2017) conducted a longitudinal study and found that children in the stable high CU trajectory were more likely to experience low parental involvement, compared to children with low, decreasing and increasing CU traits. Moreover, increases and decreases in CU traits were associated with similar changes in maternal involvement.

Not unlike findings on positive parenting, findings on the direct association between negative parenting and CU traits were also inconsistent. A number of studies reported a significant association between negative parenting and CU traits (e.g., Barker et al., 2011; Frick et al., 2003b; Loney, Hunterburg, Counts-Allan & Schmeelk, 2007, Waller et al., 2012). For instance, Frick et al (2003b) found that negative parenting (both parent and child report; measure included poor monitoring and supervision, inconsistent discipline, and corporal punishment) predicted CU traits four years later. Limitations of the study included the small sample size and atypical distribution of scores in their sample as recruitment was intentionally designed to ensure a significant number of children high on CU traits, both with and without conduct problems. Loney et al (2007) also reported that maternal parenting dysfunction (including low involvement, low-positive parenting, poor
monitoring/supervision, inconsistent discipline and corporal punishment) mediated the association between maternal psychopathic traits and child CU traits. In contrast, Enebrink, Andershed and Langstrom (2005) collected cross-sectional data from a small sample of 41 clinic-referred boys (aged 6-13) who had conduct problems, and looked at factors that differentiated those with high versus low CU traits. There was no difference in the level of ineffective parenting between the two groups, based on information obtained from interview and evaluation of case records. However, a limitation is the small sample size. A number of studies also reported no significant association between inconsistent discipline and CU traits (e.g., Hawes et al., 2011; Pardini & Leober, 2008; Pardini et al., 2007, Vitacco, Neumann, Ramos & Roberts, 2003). For instance, Vitacco et al (2003) found that CU traits were not associated with inconsistent discipline, as well as poor parental monitoring in a cross-sectional study that involved 136 Hispanic females.

Among studies that examined harsh parenting specifically, support for an association between harsh parenting and CU traits, was reported in a number of studies (e.g., Barker et al., 2011; Pardini et al., 2007; Waller et al., 2012; Waller, Baskin-Sommers & Hyde, 2016). For instance, Barker et al (2011) identified a significant association between harsh parenting (mother report; shout or slap child) at age four, and CU traits at age 13 using data from approximately 7,000 mothers and their offsprings. When group comparisons were conducted between four groups of children with different trajectories, the group with high antisocial behaviour and high CU traits experienced harsher parenting as compared to the group with low antisocial behaviour and low CU traits. In addition, the group with high antisocial behaviour and high CU traits experienced harsher parenting as compared to the group with high antisocial behaviour but low CU traits. Pardini et al (2007) likewise investigated CU
traits in a sample of high-risk children who were moderately to highly aggressive ($N = 120$, aged 9-12). They found that higher levels of parent-reported corporal punishment predicted CU traits one year later. A recent study by Waller et al (2016) examined predictors of trajectories of CU traits using a sample of 1,170 male adolescents who had interacted with the justice system. They reported that parental harshness was associated with youths with a high and stable CU traits trajectory. Studies were also conducted with younger children. For instance, Waller et al (2012) conducted a large longitudinal study with a high-risk sample of young children ($N = 731$, aged 2-4). They found that parental harshness (both parent-report and observed) predicted later CU traits, after controlling for initial CU traits, and demographic factors.

There is thus significant evidence to suggest that CU traits are positively related to harsh parenting. However, some studies have also found no significant association between harsh parenting and CU traits (e.g., Hawes et al., 2011; Pardini & Loeber, 2008). For instance, Pardini and Loeber (2008) investigated interpersonal callousness stability in a male adolescent sample ($N = 506$) and found that physical punishment showed a significant association with initial CU traits, but did not predict final CU traits. Hawes et al (2011) recruited 1,008 children between the ages of three and 10 and assessed them at baseline and 12-month follow-up using parent reports. Corporal punishment did not predict changes in CU traits.

The study by McDonald et al (2011) may shed some light to interpret the discrepant findings. In their study with 66 families, maternal psychological aggression, but not physical aggression, were related to increases in psychopathic features over time (total psychopathy score and a CU-like subscale), and mediated reduction in psychopathic features in the treatment group. The authors speculated that physical aggression was not a significant predictor as its effects may be
overshadowed by the effects of psychological aggression (which may have more powerful effects). Alternatively, physical aggression may occur less frequently as compared to psychological aggression and inconsistent parenting, and hence showed more limited effects. This study thus provided evidence that different dimensions of harsh parenting may be differently associated with CU traits. Limitations of the study included the small sample size, that the sample was characterized by severe intimate partner violence, the use of parent measures only and low alpha for the CU traits (0.34). However, this was the only study that has tested the direct association between psychological aggression and CU traits. It is still unclear if discrepant findings in this area may be due to different associations between CU traits and different dimensions of negative parenting. More research thus needs to be conducted to better understand the distinction between parental psychological aggression and physical punishment, and other specific dimensions of parenting.

**Bidirectional Associations between CU traits and Parenting**

It is also worthwhile to consider a number of other findings to help us further understand this association between CU traits and parenting. First, Viding, Fontaine, Oliver and Plomin (2009) used longitudinal, multi-informant data from community samples of twins and analyzed data using monozygotic twin differences design for 4,508 twins. Negative parental discipline (parent-reported) at age seven predicted CU traits at age 12 (both parent-reported and teacher-reported). However, there was no significant association between negative discipline at age seven and monozygotic twin differences in CU traits at age 12, after controlling for CU traits at age 7. The authors thus speculated that the relationship between parenting practices and level of
CU traits does not operate through non-shared environmental influences of negative parenting practices. Second, Larsson et al. (2008) compared parental harsh discipline between four groups of children (low CU and low antisocial behaviour, high CU and low antisocial behaviour, low CU and high antisocial behaviour, high CU and high antisocial behaviour). Data was available at ages three, four and seven. Significant differences were noted between the two groups of children with low antisocial behaviour. Specifically, children with high CU traits and low antisocial behaviour experienced more negative parental discipline at ages four and seven than those with low CU traits and low antisocial behaviour. However, the associations between parenting and the antisocial/CU traits groupings were no longer significant once early childhood problems and hyperactivity were taken into account. These results suggest a possibility that certain parenting characteristics might be evoked by child CU traits.

Taken together, the available findings suggest that there may be a reciprocal relationship between CU traits and parenting, whereby not only does parenting predict CU traits, but CU traits may also predict levels of negative parenting. Child-driven effects are consistent with the proposal that there is an evocative gene-environment correlation that is involved in the development of CU traits (Larsson et al., 2008). Genetically influenced child predispositions may elicit poor parenting, which in turn contribute to higher levels of CU traits and conduct problems over time. Specifically, children with high CU traits have been found to have a fearless temperament and be less sensitive to punishment cues (e.g., Frick et al., 2003a). They may thus be less susceptible to parental socialization and discipline, and be non-compliant to directives. Parenting is made more difficult too as the children are less proficient at processing emotional cues, and may not be able to recognize and process parents’ cues of disapproval. As a result, a parent is likely to resort to the use of harsher
parenting to manage the child’s behaviours, which are likely to be met with limited success, and as a result the punishment is likely to become increasingly coercive and inconsistent. The use of harsher and more inconsistent parenting may in turn contribute to the increased severity of CU traits (Moffitt, 2005). Further, children who are exposed to harsh parenting may be desensitized to victim suffering, resulting in higher CU traits.

A number of studies that investigated the child-drive effects of CU traits on parenting have surfaced in recent years (Brown et al., 2017; Childs et al., 2014; Hawes, et al., 2011; Muñoz, Pakalniskiene & Frick, 2011; Muratori et al., 2016; Salihovic et al., 2012; Waller et al., 2014). In one of the first studies on the bidirectional links between CU traits and parenting, Hawes et al (2011) measured CU traits and different parenting practices (inconsistent discipline, punishment, parental involvement, positive parenting, poor monitoring) in a community sample (aged 3-10) over a 12-month period. Reciprocal effects were reported between CU traits and parental involvement only. Other parenting measures only showed unidirectional associations with CU traits. Specifically, CU traits predicted changes in inconsistent discipline, punishment and parental involvement, while positive parenting, parental involvement and poor monitoring uniquely predicted changes in CU traits. Muñoz et al (2011) conducted a study that indirectly assessed the bidirectional association between CU traits and parenting. They assessed adolescents over a one-year period (N = 98), and found support for a child-driven change in parents’ monitoring behaviours over time. Specifically, children with high CU traits had parents who reduced their monitoring behaviours over time, and whose monitoring behaviours were less synchronous and stable over time. In contrast, children with low CU traits experienced more stable parenting. Salihovic et al (2012) collected data over five time
points from a community sample of adolescents aged 13 to 15. There was a significant bidirectional association between psychopathic traits and parents’ negative reaction to disclosure only. Additionally, adolescent psychopathic traits predicted changes in other measures of negative parenting (anger outbursts, coldness-rejection), but psychopathic traits were not predicted by these parenting measures. Childs et al (2014) followed a sample of 120 aggressive children over four years. No reciprocal association was found between CU traits and parenting practices. Instead, only corporal punishment and poor supervision significantly predicted changes in CU traits. Most recently, Brown et al (2017) measured poor monitoring and positive parenting in a sample of pre-schoolers at age three, and again at age six. No reciprocal effect was found for both parenting measures and CU traits. Instead, they found that poor monitoring at age three predicted CU traits at age six, while CU traits at age three predicted positive parenting at age six. Considering the diverse findings, the bidirectional association between CU traits and parenting is an area that warrants further investigation.

**Cultural Influences on CU traits**

Having discussed a wide range of studies that investigated the associations between CU traits, parenting and conduct problems, it is important to highlight that research on CU traits has been greatly limited to the Western countries, especially United States, United Kingdom, and Australia. For instance, in the review by Waller et al (2013) on the association between parenting, CU traits and antisocial behaviour in youth, 27 out of the 30 studies included in their review were from these countries. The other three countries represented were Luxembourg, Sweden and Israel. No study from a Chinese population was included. We thus cannot assume that existing
evidence can be generalized across diverse cultures. As discussed in previous
sections, studies have identified cross-cultural differences in conduct problems and
parenting (e.g., Crijnen et al., 1997; Deater-Deckard et al., 1996). Past reviews have
also reported different effect sizes for psychopathy by country of origin and ethnicity
(Edens, Campbell & Weir, 2007; Guy, Edens, Anthony & Douglas, 2005; Leistico,
Salekin, DeCoster & Rogers, 2008). Evidence of cross-cultural differences associated
with CU traits has also emerged in recent years (e.g. Fung, et al., 2009). Fung et al
(2010) examined child psychopathy in Hong Kong and found that Hong Kong
children had higher scores on CU traits than a sample of children from the United
States. This may be contributed by the Chinese cultural tradition of suppressing
emotional expression that resulted in the higher rating of unemotional behaviour. For
instance, Tsai and Levenson (1997) found that Chinese-Americans reported reduced
positive emotions and less variability in emotional experiences when compared to
European Americans. There is thus a need for research to further examine CU traits,
and its relationships with parenting and conduct problems in Asian countries.

Singapore is a country that may provide an interesting context to conduct such
a study. It is a multi-ethnic society that is made up of a majority of Chinese (74.2%).
but also a significant proportion of Malays (13.3%) and Indian (9.2%)(The World
Factbook, n.d.). While Singapore is very much westernized, it continues to practise
many of the Chinese traditions. There is a common Chinese saying that ‘beating is
affection, scolding is love’. The Confucian values of emotional restraint and
discipline are also very much a part of life in Singapore, and have been promoted in
school curriculum (Ackermann, 1997). It is also evident from nationwide policies that
order and strict discipline are of top importance. Physical punishment is still
practised, and very much viewed as acceptable. For instance, caning is used as a
judicial punishment for serious crimes, such as rape, drug trafficking, gang robbery and kidnapping. In schools, corporal punishments may be imposed in instances of severe misconduct, and this is allowed under the Educations (Schools) Regulations. These policies are guided by the underlying societal belief that learning cannot take place unless there is discipline. Similar sentiments exist among parents; in a survey of 100 parents, 57 said that caning was an acceptable form of punishment and they had used it on their children ("To cane or not to cane", 2009). Considering this culture of acceptance towards strict discipline and punishment, it will be noteworthy to investigate how negative parenting may relate to CU traits and conduct problems in Singapore, and if existing findings on CU traits generalize to Singapore.
CHAPTER 2
CALLOUS-UNEMOTIONAL TRAITS IN ASIAN CULTURES:
A SYSTEMATIC REVIEW
Callous-unemotional (CU) traits refer to a lack of guilt or remorse, a lack of empathy or concern for others’ feelings, a lack of concern about one’s performance, and shallow affect. These traits have often been conceptualized based on the affective dimension of psychopathy, and were recently introduced into the fifth edition of the Diagnostic and Statistical Manual of Mental Disorder (DSM-5; APA, 2013), as a specifier (‘limited prosocial emotions’) for conduct disorder. Research into CU traits has grown rapidly in recent years, with an emerging evidence base to indicate that among children with conduct problems, CU traits are associated with a particularly severe trajectory of conduct problems. In a comprehensive review by Frick et al (2014), 89% of studies found evidence for a significant association between CU traits and antisocial or aggressive behaviours, with an average correlation of .33 (e.g., Basque et al., 2012; Kahn et al., 2012; Pardini et al., 2012). Longman et al (2016) added to this evidence in a recent review with children below the age of five when they found a significant positive relationship between CU traits and conduct problem severity in the order of large effect size (e.g., Willoughby et al., 2014).

Other research has found that children with CU traits are associated with a range of unique neurodevelopmental and emotion-related correlates, including abnormalities in the processing of punishment cues (e.g., Frick et al., 2003), a tendency to endorse more deviant values and goals in social situations (e.g., Pardini, 2011), deficits in affective empathy (e.g., Dadds et al., 2012), and impairment in responsiveness and recognition of fear and sadness in others (e.g., Dadds et al., 2006). In terms of biological underpinnings, there is evidence that CU traits are associated with reduced emotional reactivity to specific stimuli, such as heart rate change, skin conductance reactivity, cortisol reactivity and reduced right amygdala activity (e.g., de Wied et al., 2012). CU traits have also been associated with variation in oxytocin
receptor (OSTR) gene polymorphism (e.g., Beitchman et al., 2012; Dadds et al., 2013), and grey matter volume (Sebastian et al., 2016).

In terms of distinct environmental risk processes, a number of studies have found that associations between conduct problems and negative parenting are reduced among children with high levels of CU traits. (e.g., Edens et al., 2008; Fanti & Centifanti, 2014; Hipwell et al., 2007; Pasalich et al., 2011; Wootton et al., 1997; Yeh et al., 2011). Among studies examining the treatment outcomes of children with conduct problems and CU traits, the majority has reported evidence of poor treatment outcomes following interventions that target parenting practices (see review by Hawes et al., 2014).

Despite the considerable evidence that now exists for CU traits as markers for a distinct, high risk pathway to conduct problems associated with unique treatment needs, it must be noted, that this evidence has been limited largely to research conducted in the United States, United Kingdom, Europe, Canada and Australia (Frick et al., 2013; Hawes et al., 2014). Relatively little is known about childhood CU traits in Asian cultures, or the extent to which findings from Western culture generalize. Past reviews have reported different effect sizes for psychopathy by country of origin and ethnicity (Edens et al., 2007; Guy et al., 2005; Leistico et al., 2008). There is also emerging evidence of cross-cultural variations in CU traits. A community sample of children from Hong Kong was found to score higher on CU traits compared to a sample from United States (Fung et al., 2009). It is thus plausible that distinct cultural differences between the eastern and western cultures may contribute to unique presentations and risk processes in Asian populations with respect to CU traits.
The aim of this chapter was to provide a systematic review of existing research regarding CU traits in Asian cultures. Based on key findings from research in Western countries, findings from this research are addressed in relation to four key questions regarding the extent to which CU traits among Asian children and adolescents have been associated with (1) increased severity of conduct problems; (2) distinct neurodevelopmental and emotion-related correlates; (3) distinct environmental risk factors; and (4) distinct treatment outcomes. The psychometric performance of CU traits measures in these samples was also of interest.

**Systematic Review Method**

**Selection of Studies**

A comprehensive literature search was conducted using PsycINFO and MEDLINE, as these were databases most commonly used in other clinical reviews (e.g., Ferguson, 2013; Polanczyk et al., 2007). The search strategy used a combination of terms to identify studies investigating CU traits in Asian populations. No publication or language restrictions were imposed on the search. Titles and abstracts were screened using the following criteria: (a) samples with an upper age range of 19 years; (b) studies conducted in Asian countries; (c) measurement of CU traits or psychopathic traits through measures that are established or supported by psychometric investigation; (d) data reported on associations between CU traits and conduct problems, individual or environmental risk factors, or treatment outcomes. As this is an exploratory study to examine the findings on CU traits in Asian countries, we searched for any study that was conducted in any Asian country instead of limiting it to specific part of Asia. This thus included countries in East Asia (e.g., Japan,
Korea, China, Hong Kong), South Asia (e.g., India, Sri Lanka, Bangladesh), South East Asia (e.g., Malaysia, Philippines) and West Asia (e.g., Saudi Arabia, Syria, Israel). We included studies that investigated psychopathic traits broadly, instead of limiting our study to those that reported on CU traits specifically. However, we recognized that findings from studies that measured psychopathic traits may be contributed by other dimensions of psychopathy (e.g., narcissism, impulsivity). The terms ‘psychopathic traits’ or ‘psychopathy’ were thus used to report findings from these studies so as to allow us to differentiate the findings as necessary. There was no other additional criterion regarding study design.

The initial search identified 144 records. Studies that investigated psychopathic deviant tendency using the Minnesota Multiphasic Personality Inventory-2 (e.g., Khodarahimi, 2013) were excluded as psychopathic deviant tendency measures a person's need for control or his fight against control and is different from clinical psychopathy that we are interested to study. We also excluded a study (Helode & Kapai, 1986) that used Comprehensive Personality (CPI; Mukherjee & Pande, 1968) to measure psychopathic traits as the English version used in the study has not had its psychometric properties verified and no coefficient alpha was reported in the study. Studies that did not answer any of the four key questions were also excluded (e.g., Beaver et al., 2016). A total of 16 studies were retained from this screening. One additional study was included based on a scan of recent reviews of CU traits (Cheng, Hung & Decety, 2012). There was thus a final pool of 17 studies that comprised 15 different samples. Studies were reviewed according to the four research questions: (a) Are CU traits associated with increased severity of conduct problems? (b) What are the distinct neurodevelopmental and emotion-related correlates associated with CU traits? (c) What are the distinct environmental risk
factors associated with CU traits? (d) Are distinct treatment outcomes associated with CU traits? When studies investigated more than one research questions, they were presented in multiple sections of this review. The studies were critically examined for methodological limitations, such as sample size, type of sample, study design, and measurements used.

**Study Characteristics**

A summary of the study characteristics is provided in *Table 1*. This included 16 published research between 2009 and 2017, and one dissertation (Law, 2012). In total, the 15 samples comprised 13,283 children and adolescents, with sample size ranging from 28 to 3,675. This included three very small samples (*N* < 100; Cheng et al., 2012; Eremsoy, Karanci & Berument, 2011; Zhang et al., 2015), and six large samples (*N* > 500). Additionally, Law (2012) reported results for subgroups, which were extremely small (*n* = 11). Data from these studies with small sample sizes should thus be interpreted with caution. The participants ranged in age from two to 19; there was only one preschool sample (two to five years old), and the rest of the studies were conducted with children and adolescents aged eight and above. Five samples were either all or majority male, while eight samples had relatively equal number of males and females. A majority of the studies were community samples, and there were three offender samples, one clinic-referred sample, and two at-risk samples (whereby ‘at-risk’ refers to participants who were not offenders or clinic-referred but showed disruptive behaviours). The studies were all cross-sectional studies, with the exception of one sample that was an intervention study. This was a limitation as it was not possible to establish directionality and causality between
factors for most of the studies. Studies from Chinese-dominated countries made up more than two-thirds of the studies: Singapore, Hong Kong, China and Taiwan. The other countries that were represented in our review were Israel and Turkey from West Asia.
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<th>Study</th>
<th>Country</th>
<th>Sample size</th>
<th>Sample Type</th>
<th>Age range (years)</th>
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<th>Psychopathic / CU Traits Measure</th>
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<td></td>
</tr>
<tr>
<td>Ang et al (2014)</td>
<td>Singapore</td>
<td>113</td>
<td>At-risk</td>
<td>11 – 16</td>
<td>69.9%</td>
<td>Psychopathy: APSD (P), 20 items</td>
</tr>
<tr>
<td>Ang et al (2015)</td>
<td>Singapore</td>
<td>1027</td>
<td>Community</td>
<td>M = 14.10</td>
<td>41.8%</td>
<td>Psychopathy: APSD (Y), 20 items</td>
</tr>
<tr>
<td>Cheng et al (2012)</td>
<td>Taiwan</td>
<td>28</td>
<td>Offenders</td>
<td>15 - 18</td>
<td>0%</td>
<td>Psychopathy: PCL-YV, 20 items</td>
</tr>
<tr>
<td>Chu et al (2014)</td>
<td>Singapore</td>
<td>168</td>
<td>Offenders</td>
<td>13 – 18</td>
<td>0%</td>
<td>CU: YPI (Y), 15 items</td>
</tr>
<tr>
<td>Eremsoy et al (2011)</td>
<td>Turkey</td>
<td>71</td>
<td>Community</td>
<td>8 – 11</td>
<td>47.9%</td>
<td>CU: APSD (P, T, C), 6 items</td>
</tr>
<tr>
<td>Fung et al (2009)</td>
<td>Hong Kong</td>
<td>3675</td>
<td>Community</td>
<td>11 – 16</td>
<td>47.0%</td>
<td>CU: APSD (P), 6 items</td>
</tr>
<tr>
<td>Law (2012)</td>
<td>Hong Kong</td>
<td>118</td>
<td>Offenders</td>
<td>12 – 16</td>
<td>0%</td>
<td>CU: ICU (Y), 24 items</td>
</tr>
<tr>
<td>Li et al (2017)</td>
<td>Singapore</td>
<td>1027</td>
<td>Community</td>
<td>12 – 19</td>
<td>40.3%</td>
<td>CU: APSD (P), 24 items</td>
</tr>
<tr>
<td>Raine et al (2014)</td>
<td>Hong Kong</td>
<td>334</td>
<td>Community</td>
<td>11 – 17</td>
<td>41.6%</td>
<td>CU: APSD (P), 6 items</td>
</tr>
<tr>
<td>Somech &amp; Elizur (2009, 2012a)</td>
<td>Israel</td>
<td>136</td>
<td>Community</td>
<td>12 – 18</td>
<td>0%</td>
<td>Callousness: ICU (Y), 11 items</td>
</tr>
<tr>
<td>Wang et al (2015)</td>
<td>China</td>
<td>2108</td>
<td>Community</td>
<td>11 – 19</td>
<td>45.1%</td>
<td>CU: APSD (Y), 4 items</td>
</tr>
<tr>
<td>Wong et al (2014)</td>
<td>Hong Kong</td>
<td>1412</td>
<td>Community</td>
<td>8 – 14</td>
<td>N.A.</td>
<td>CU: ICU (Y), 24 items</td>
</tr>
<tr>
<td>Zhang et al (2015)</td>
<td>China</td>
<td>29</td>
<td>Clinic-referred</td>
<td>14 – 17</td>
<td>0%</td>
<td>CU: ICU (Y), 24 items</td>
</tr>
<tr>
<td>Zuo et al (2016)</td>
<td>China</td>
<td>2828</td>
<td>Community</td>
<td>13 – 19</td>
<td>56.0%</td>
<td>Psychopathy: Short D-3 (Y), 9 items</td>
</tr>
<tr>
<td><strong>Intervention Studies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elizur et al (2017), Somech &amp; Elizur (2012b)</td>
<td>Israel</td>
<td>209</td>
<td>At-risk</td>
<td>2 – 5</td>
<td>22.0%</td>
<td>CU: APSD + ICU (P), 11 items</td>
</tr>
</tbody>
</table>

Note: APSD, Antisocial Process Screening Device; YPI, Youth Psychopathic Trait Inventory; CPI, Comprehensive Personality; ICU, Inventory of Callous-Unemotional Traits; PCL:YV, Hare Psychopathy Checklist Youth Version; P, parent; Y, youth; T, teacher; C, combined
In terms of the measure of CU or psychopathic traits, four samples measured
callousness. The Antisocial Process Screening Device (APSD; Frick & Hare, 2001)
was the most commonly used instrument to assess CU traits or psychopathy. It is a
20-item questionnaire that includes six items for CU traits subscale. There are
different formats including parent, teacher and youth self-report. In total, seven
studies used the APSD, with two studies reporting only the total psychopathy score
and not the CU subscale, and two studies adapting the CU subscale to include only
four items. The next most common measure is the Inventory of Callous-Unemotional
Traits (ICU; Frick, 2004), which is used in four studies. Other measures used were
Hare Psychopathy Checklist – Youth Version (PCL-YV; Forth, Kosson & Hare,
2003), Youth Psychopathic Trait Inventory (YPI; Andershed, Kerr, Stattin, &
Levander, 2002), and Short D-3 (Jones & Paulhus, 2014). One sample combined
items from the preschool ICU with APSD items (Elizur, Somech & Vinokur, 2017;
Somech & Elizur, 2012b).

Eight studies reported good internal consistency of the CU traits or
psychopathy measure (α > 0.7). Data was however not available for the internal
consistency of measures used in three studies (Chu, Daffern, Thomas, Ang & Long,
2014; Raine, Fung, Portnoy, Choy & Spring, 2014; Zhang et al., 2015), which makes
it difficult to ascertain their validity. In addition, four other studies reported poor
consistency of the CU traits or psychopathy measure (α < 0.7), which undermine their
validity (Fung et al., 2009; Li, Chan, Ang & Huan, 2016; Wang, Deng, Armour, Bi &
Zeng, 2015; Zuo, Wang, Xu, Wang & Zhao, 2016). Poor consistency was also
reported for other measures in five studies (Ang, Huan, Chan, Cheong & Leaw, 2015;
Elizur et al., 2017; Li et al., 2017; Wang et al., 2015; Zuo et al., 2016). Of note, only
one study relied on interview (Cheng et al., 2012) while the rest employed questionnaires. Eight of the studies relied on youth-report, five relied on parent-report, and one study reported on parent, teacher and combined ratings. While questionnaires are relatively common and easy to administer, there are shortcomings, including social desirability effects, subjectivity and difficulties interpreting the items. For instance, studies that relied on youth self-reports run a greater risk of respondents providing socially desirable responses when they are asked to rate themselves on CU traits and conduct problems. Shared method variance is also a limitation for studies that relied solely on one source of data as there may be a false correlation.

**Results**

**CU Traits and Conduct Problems**

10 studies reported on the association between CU traits and antisocial behaviours and provided important information about the predictive validity of CU traits in classifying children with more severe presentation and trajectory of antisocial behaviours in Asian culture. They were largely community samples with the exception of one at-risk sample (Elizur et al., 2017), and one offender group (Law, 2012). There was a fairly even distribution of males and females in seven studies, while three studies were either predominantly or all male samples (Elizur et al., 2017; Law, 2012; Somech & Elizur, 2012a). The majority of studies were cross-sectional studies, with the exception of one study that was an intervention study (Elizur et al., 2017). Eight of the studies measured CU traits, one measured callousness, and one study measured psychopathy. Five studies provided measures of CU traits and antisocial behaviours based on youth self-reports only, and three studies were based
on parent-reports only.

As summarized in Table 2a, the studies were consistent in reporting that CU and psychopathic traits were significantly associated with delinquency and rule-breaking behaviours (Ang et al., 2015; Li et al., 2017; Wang et al., 2015), total aggression (Raine et al., 2014; Wang et al., 2015; Wong, Freeman & Hughes, 2014), proactive aggression (Ang et al., 2015; Li et al., 2017; Raine et al., 2014; Wang et al., 2015), offender status (Law, 2012) and ADHD (Law, 2012). The strength of the correlation between CU traits and conduct problems ranged from .077 to .65. For instance, Wong et al (2014) found a significant correlation ($r = .34, p < .01$) between CU traits and total aggression in a large Hong Kong community sample ($n = 1412$, aged 8-14). Additionally, Fung et al (2009) conducted a study with 3,675 children from Hong Kong aged 11 to 16 and found that CU traits correlated with aggression ($r = .077, p < .001$) and delinquency ($r = .106, p < .001$) after controlling for impulsivity and narcissism.
Table 2

Results of included studies presented according to research questions in Study 1

<table>
<thead>
<tr>
<th>Study</th>
<th>Key Study Results</th>
<th>Main Methodological Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a) Association between CU traits and conduct problems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eremsoy et al (2011)</td>
<td>CU traits correlated with conduct problems/hyperactivity.</td>
<td>Small sample.</td>
</tr>
<tr>
<td>Fung et al (2009)</td>
<td>CU traits correlated with aggression and delinquency after controlling for impulsivity and narcissism.</td>
<td>Parent report only. Low alpha for CU traits (.58).</td>
</tr>
<tr>
<td>Law (2012)</td>
<td>CU traits correlated with offender status, ADHD diagnosis and symptom score. CU traits were significantly higher in an early-onset offending group (n = 95) as compared to a non-offending control group (n = 63).</td>
<td>All male sample.</td>
</tr>
<tr>
<td>Li et al (2017)</td>
<td>CU traits correlated with delinquency and proactive aggression but not with reactive aggression.</td>
<td>Youth self-report only. Large age range. Low alpha for CU (.56).</td>
</tr>
<tr>
<td>Somech &amp; Elizur (2009)</td>
<td>Callousness was associated with conduct problems, even after controlling for age. Callousness had direct effect on conduct problems, and AHC was a significant mediator.</td>
<td>All male sample. 47% participation rate; possibility of selection bias. Youth self-report only.</td>
</tr>
<tr>
<td>Wang et al (2015)</td>
<td>CU traits correlated with rule-breaking behaviour, proactive aggression, and total aggression, but not with reactive aggression and externalizing behaviour.</td>
<td>Low alpha for CU traits (.504), rule-breaking behaviour (.672). Youth self-report only.</td>
</tr>
<tr>
<td>Wong et al (2014)</td>
<td>CU traits correlated with aggression.</td>
<td>Youth self-report only.</td>
</tr>
<tr>
<td>Study</td>
<td>Key Study Results</td>
<td>Main Methodological Limitations</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>b) Association between CU traits, and neurodevelopmental and emotion-related correlates</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheng et al (2012)</td>
<td>Offenders high on psychopathic traits demonstrated higher pain thresholds and impairment in their experience of pain empathy (decreased frontal N120, central P3, and late positive potential) when shown stimuli of others in pain.</td>
<td>Small sample. Male only sample.</td>
</tr>
<tr>
<td>Law (2012)</td>
<td>An early-onset high CU offender group showed a greater reward dominance response in card playing task when compared to an early-onset ADHD offender group, adolescent-onset offender group and a control group. There was no difference in IQ or anxiety between the high CU group and the other groups.</td>
<td>All male sample. Youth self-report only. Very small sample in each group (n = 11 for early-onset high CU group). Arbitrary cut-off of above 75 percentile of CU score to determine a high CU group.</td>
</tr>
<tr>
<td>Li et al (2017)</td>
<td>CU traits correlated with grandious-manipulative traits.</td>
<td>Youth self-report only. Large age range. Low alpha for CU, impulsivity, and grandious-manipulative (.56, .54, .68)</td>
</tr>
<tr>
<td>Raine et al (2014)</td>
<td>No correlation between CU traits and resting heart rate. CU traits correlated with narcissism.</td>
<td>Parent report only. No alpha reported.</td>
</tr>
<tr>
<td>Somech &amp; Elizur (2012a)</td>
<td>Callousness correlated positively with anxiety/depression, but there is no association between callousness and anxiety/depression after controlling for hostility/suspicion. There is no direct association between callousness</td>
<td>Youth self-report only. Male only sample. Only 47% participation rate; possibility of</td>
</tr>
<tr>
<td>Study</td>
<td>Findings</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wong et al (2014)</td>
<td>CU traits did not correlate with verbal ability, but correlated positively with mistrust (general, school, home), and anxiety. After controlling for verbal ability and SES, general mistrust (but not home or school mistrust) was significantly associated with CU traits.</td>
<td>Youth self-report only.</td>
</tr>
<tr>
<td>Zhang et al (2015)</td>
<td>In the CD group, CU traits were negatively associated with effective connectivity (EC) between the Inferior Frontal Gyrus (IFG) and striatum, and from the striatum to the IFG.</td>
<td>Male only sample. All subjects with Conduct Disorder had adolescent-onset CD. No alpha.</td>
</tr>
<tr>
<td><strong>c) Association between CU traits and environmental risk processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ang et al (2014)</td>
<td>Boys who experienced early separation from parents (before age 3) had higher levels of psychopathic traits than boys who did not. No effect of early separation on girls’ levels of psychopathic traits.</td>
<td>Parent report only. Relatively small sample. More girls than boys.</td>
</tr>
<tr>
<td>Chu et al (2014)</td>
<td>No significant difference in CU traits between gang and nongang-affiliated youth offenders.</td>
<td>No alpha reported. Male sample only.</td>
</tr>
<tr>
<td>Elizur et al (2017)</td>
<td>CU traits correlated positively with parental distress and parental helplessness concurrently, and across time. CU traits correlated positively with negative/inconsistent parenting concurrently. CU traits correlated negatively with positive</td>
<td>Parent report only. Male dominated sample. Low alpha for parenting scales (.66 for negative/inconsistent</td>
</tr>
</tbody>
</table>
parenting concurrently. Positive parenting at pre-intervention negatively predicted CU traits post-intervention. Treatment effects on CU traits were mediated by ineffective parenting (negative/inconsistent parenting, parental distress and parental helplessness).

Fung et al (2009) High social adversity group had significantly higher scores on CU. Parent report only. Low alpha for CU traits (.58).

Law (2012) An early-onset high CU group had lower levels of positive parenting and parental involvement, and poorer parental monitoring when compared to control group. No difference in family adversities or deviant peer affiliation. All male sample. Self-report only. Very small sample in each group (n = 11 for early-onset high CU group). Arbitrary cut-off of above 75 percentile of CU score to determine a high CU group.


Wong et al (2014) Children from low SES showed more CU traits. Youth self-report only.

d) Association between CU traits and treatment outcomes

Elizur et al (2017); Somech & Elizur (2012) Reduction in CU traits for treatment group, which is mediated by reduction in ineffective parenting. Treatment effects on CU traits, maintained at 1-year follow-up. Parent-report only. Male-dominated sample. High follow-up attribution (40% for treatment group, 58% for controls).

Note: CU = Callous-Unemotional, SES = Socio-economic status.

Further, Eremsoy et al (2011) conducted a study with a sample of 71 schoolchildren from Turkey and reported a significant association between CU traits
and conduct problems/hyperactivity, and this was for both parent-report \((r = .49, p < .001)\), and teacher-report \((r = .51, p < .001)\) CU traits. The findings were replicated by Elizur et al (2017) who assessed CU traits and conduct problems in a randomized controlled trial of Jewish participants from Israel at pre-intervention and post-intervention (aged three to five; \(n = 209\)), and reported a significant association between CU traits and conduct problems at all time points \((r = .24 – .43, p < .001)\).

Specifically, CU traits correlated with conduct problems at pre-intervention and post-intervention, and pre-intervention CU traits predicted conduct problems at post-intervention. Additionally, one study from Israel controlled for age and found that callousness was still associated with conduct problems among 136 male adolescents aged 12 to 18 \((\beta = .17, p < .05)\) (Somech & Elizur, 2009). However, one large community study from China \((n = 2108; aged 11-19)\) did not find a significant association between youth-reported CU traits and externalising behaviours (Wang et al., 2015).

Findings on the association between CU traits and reactive aggression were mixed; two studies reported a positive association while two studies reported no significant association between CU traits and reactive aggression. Specifically, Ang et al (2015) measured psychopathic traits and reactive aggression in a large Singaporean sample of adolescents and found a significant relation between psychopathic traits and reactive aggression \((r = .47, p < .01)\). Similar findings were reported by Raine et al (2014). They found a significant association between CU traits and reactive aggression \((r = .18, p < .01)\) in a Hong Kong community sample (aged 11–17; \(n = 334\)). In contrast, Wang et al (2015) did not find a significant correlation between CU traits and reactive aggression in China, as was the case for Li et al (2017) in a Singapore study. However, Li et al (2017) reported that there was a significant
negative association between CU traits and reactive aggression when a regression analysis was conducted with all three factors of APSD included as independent variables ($\beta = -0.06, p < .05$). Interestingly, both Li et al (2017) and Wang et al (2015) used a 4-item CU subscale from the APSD, which had poor internal consistency ($\alpha = .50, .56$).

Taken together, available findings suggest that CU and psychopathic traits are associated with more severe conduct problems, delinquency, proactive aggression, and total aggression, in Asian countries. Only one such study did not report a significant association between CU traits and conduct problems (Wang et al., 2015). Results were, however, more mixed for reactive aggression, which suggest that more research should be conducted in Asia to further investigate this. A number of limitations of the existing studies should also be noted. Firstly, the majority of studies relied on only one source of data (parent or child), resulting in the problem of shared method variance and the possibility of false correlation. The majority of the studies also only reported on simple correlations at one time-point except for one intervention study (Elizur et al., 2017) and this is inadequate to conclude if CU traits predict later antisocial behaviour. Further, only one study controlled for impulsivity and narcissism (Fung et al., 2009). It is thus difficult to conclude if the association between CU traits and antisocial behaviour will remain significant after other measures of antisocial behaviour or comorbidity (e.g. impulsivity) are controlled for.

**CU Traits, and Neurodevelopmental and Emotion-Related Correlates**

11 studies reported on the association between CU traits, and neurodevelopmental and emotion-related correlates, and results are presented in Table
2b. As there was a broad range of studies, findings are presented according to: (a) biological markers, (b) cognitive correlates, and (c) temperament and personality correlates. Firstly, three studies from East Asia investigated biological factors and their association with CU \((n = 2)\) or psychopathic \((n = 1)\) traits. Among a sample of male adolescents from Taiwan (15–18 years), Cheng et al (2012) found that offenders with high CU traits \((n = 13)\) had higher pain thresholds and experienced reduced event-related potentials (decreased frontal N120, central P3, and late positive potential) to stimuli of others in pain, as compared to offenders with low CU traits \((n = 15)\) and a control group \((n = 15)\). In another sample of 29 adolescent males with adolescent-onset conduct disorder from China (14-17 years), Zhang et al (2015) reported that CU traits negatively correlated with effective connectivity (EC) between the Inferior Frontal Gyrus (IFG) and striatum, and from the striatum to the IFG. This was measured when participants were completing a GoStop task that measures one’s ability to inhibit an initiated predominant response (Dougherty, Mathias & Marsh, 2003). Raine et al (2014) investigated low resting heart rate as a risk factor for psychopathy among 334 children from the Hong Kong community (aged 11–17), and reported no association between resting heart rate and CU traits after controlling for age and sex.

Another two studies investigated cognitive characteristics and their associations with CU traits. Law (2012) reported a reward dominance response in a card playing task by a group of offenders with high CU traits and early-onset conduct problems \((n = 11)\), when compared to a group of offenders with low CU traits, high ADHD and early-onset conduct problems \((n = 17)\), an adolescent-onset offender group \((n = 21)\), and a control group \((n = 63)\). The offenders with high CU traits continued to play more cards even as rewards decrease and punishment increase, i.e.,
showing response preservation towards rewards, and punishment insensitivity. Additionally, Law (2012) found no difference in intelligence between participants with high versus low CU traits. However, the findings need to be interpreted cautiously considering the extremely small sample size, and an arbitrary cut-off of 75 percentile of CU score to determine a high CU group. On the other hand, Wong et al (2014) recruited a sample of 1,412 children and adolescents (aged 8-14) from Hong Kong and reported that CU traits correlated negatively with verbal ability ($r = -.08, p < .05$).

Finally, nine studies investigated different temperament and personality correlates to CU or psychopathic traits. Seven studies measured CU traits, one measured callousness, and one measured psychopathic traits. Six community studies tested the association between CU or psychopathic traits, and psychopathy-linked narcissism, which refers to a tendency to dominant others through aggressive means to achieve power and prestige (Kerig & Stellwagen, 2010). Of these, five studies reported a significant positive relation between CU traits and narcissism (Eremsoy et al., 2011; Li et al., 2017; Raine et al., 2014; Wang et al., 2015; Zuo et al., 2016). The strength of the correlation ranged from .09 to .35. For instance, Zuo et al (2016) assessed personality traits in 2,828 Chinese students (aged 13-19) and reported a positive correlation between psychopathy and narcissism ($r = .30, p < .001$). In contrast, one study found a negative association between CU traits and narcissism; Fung et al (2009) reported a negative correlation ($r = -.20, p < .001$) in their Hong Kong community sample ($n = 3,675$; aged 11-16). Additionally, Li et al (2017) reported no significant association between CU traits and narcissism in another smaller at-risk sample of 113 adolescents (aged 11-16). Only one study investigated Machiavellianism, which refers to the use of deception and manipulation and poor
concern for conventional morality (Kerig & Sink, 2010). Zuo et al (2016) reported a positive association ($r = .476, p < .001$) between psychopathic traits and Machiavellianism.

Five studies reported on the relation between CU traits and anxiety, and results were mixed. A positive association between CU traits or callousness and anxiety/depression were reported in three community samples from Turkey, Israel and Hong Kong (Eremsoy et al., 2011; Somech & Elizur, 2012a; Wong et al., 2014). Strength of correlation ranged from .10 to .42. However, Somech and Elizur (2012a) reported that the association between CU traits and anxiety/depression became insignificant after controlling for age and hostility/suspiciousness. Law (2012) also reported no difference in anxiety/depression ratings between an offender group with high CU traits and early-onset conduct problems ($n = 11$) and other subgroups (group of offenders with low CU traits, high ADHD and early-onset conduct problems $n = 17$, an adolescent-onset offender group $n = 21$, and a control group $n = 63$). Only Fung et al (2009) reported a negative correlation ($r = -.09, p < .001$) between CU traits and anxiety/depression in a Hong Kong community sample ($n = 3,675$; aged 11-16), although this association became insignificant after controlling for impulsivity and narcissism.

Two studies measured mistrust and hostility. Wong et al (2014) reported that CU traits correlated positively with mistrust (general, school, home). After controlling for verbal ability and social-economic status, only general mistrust continued to be related to CU traits ($\beta = 1.39, p < .001$). Similarly, Somech and Elizur (2012a) reported a positive correlation between callousness and hostility/suspiciousness ($r = .36, p < .01$), but no direct association between callousness and hostility/suspicion after controlling for anxiety/depression. Nonetheless, the relationship is mediated by
adherence to honour code, which is a measure of one’s attitudes towards upholding one’s own masculine honour, and to protect other females, family members and friends.

In summary, a broad range of Asian studies has examined the association between CU traits and various neurodevelopmental and emotion-related factors. It is difficult to make any conclusion about biological risk markers (reduced biological responses to emotional stimuli, abnormal brain responses during cognitive tasks and low resting heart rate) for CU traits from three available studies that each measured different risk factors. Moreover, two of the studies had very small sample sizes ($n < 50$), and two studies did not report any coefficient alphas in their studies. This is similarly the case for cognitive risk factors (reward dominance response, intelligence), which were assessed in two studies only, of which one study had very small sample sizes for its subgroups. In terms of temperament and personality risk factors, the most consistent finding was a positive association between CU traits and narcissism, which was reported in five community studies. It is however difficult to explain the one study that reported a negative association. Mixed findings were reported for anxiety/depression, with findings often becoming insignificant after controlling for other factors. This is similarly the case for hostility/mistrust. Finally, only one study assessed Machiavellianism. Limitations of the study should be considered when interpreting these findings. In particular, studies were mostly based solely on youth self-reports ($n = 6$), or parent reports ($n = 3$), subjecting the studies to the possibility of inflated correlations because of shared method variance. Seven of the 11 studies also had poor coefficient alphas, or no alpha was reported, raising questions about the validity of measured used.
**CU Traits and Environmental Correlates**

Nine studies reported on environmental correlates associated with CU traits. This included six studies that measured CU traits, two studies that measured psychopathic traits, and one study that measured callousness. Firstly, five studies investigated various social adversity risk factors for CU traits \((n = 4)\) and callousness \((n = 1)\). On one hand, three studies found that low socioeconomic status (SES) correlated with callousness or CU traits (Fung et al., 2009; Somech & Elizur, 2009; Wong et al., 2014). For instance, Fung et al (2009) created a social adversity index that included parents’ education level, family income, divorced parents, big family size, poor neighbourhood and residential care. They found that children with low SES in a large Hong Kong community sample had higher CU traits. On the other hand, two studies reported no association between low SES and CU traits or psychopathic traits (Law, 2012; Raine et al., 2014). For instance, Raine et al (2014) measured social adversity through an interview with caregivers, and a six-variable index was used (father’s low education, mother’s low education, low income, divorced parents, big family size, poor neighbourhood). No correlation was reported between social adversity and CU traits. However, the study by Law (2012) was based on a small sample, while the study by Raine et al (2014) had no reported alpha. The results from these studies should thus be interpreted with caution. Results are summarised in Table 2c.

Somech and Elizur (2009) reported that in an Israeli community sample of male adolescents \((N = 136; \text{aged 12-18})\), callousness correlated with insecure attachment \((r = .25, p < .01)\). Ang et al (2014) reported similar findings in an at-risk sample from Singapore, whereby parents of 113 at-risk adolescents were interviewed about whether the child was ever separated from his parents before the age of three.
They reported that boys who experienced early separation had higher levels of psychopathic traits than boys who did not experience any separation. However, this difference was not present for girls.

In the only intervention study and the only study involving preschoolers ($N = 209$), Elizur et al (2017) reported that CU traits correlated positively with parental distress and parental helplessness concurrently, and across time. CU traits also correlated positively with negative/inconsistent parenting, and negatively with positive parenting, concurrently at pre-intervention and post-intervention. In addition, positive parenting at pre-intervention negatively predicted CU traits post-intervention. In another study by Law (2012), it was reported that a group of offenders with high CU traits and early-onset conduct problems ($n = 11$) experienced less positive parenting than a group of offenders with low CU traits, high ADHD and early-onset conduct problems ($n = 17$), an adolescent-onset offender group ($n = 21$), and a control group ($n = 63$). The group with high CU traits also experienced less paternal and maternal involvement than the adolescent-onset offender group, and control group. The group with high CU traits also reported poorer parental monitoring than the control group. No difference in corporal punishment was noted between the group with high CU traits and the other groups.

Finally, three studies investigated peer risk factors associated with CU traits. Results were consistent in showing no effect of peer influence. Specifically, Law (2012) reported no difference in deviant peer affiliation between an early-onset offender group with high CU traits ($n = 11$), and the group of offenders with low CU traits, high ADHD and early-onset conduct problems ($n = 17$), and an adolescent-onset offender group ($n = 21$) in Hong Kong. The findings were similar in two Singapore studies. Ang (2015) reported no association between psychopathy and gang
membership in a sample of 113 at-risk adolescents aged 11 to 16 years, while Chu et al (2014) reported no significant difference in CU traits between gang and nongang-affiliated male youth offenders \( (n = 168, \text{aged 13-18}) \). However, it is worthwhile to note that Ang et al (2015) reported a negative correlation between psychopathy and school engagement, suggesting that prosocial network may be a protective factor against psychopathy.

In summary, findings on environmental risk factors in Asian samples revealed relatively consistent findings although the limited number of studies precludes the possibility of making any firm conclusion. Taking into account study designs and limitation of studies, it appears that social adversity or low SES was a likely risk factor for CU traits. Early separation from parents and insecure attachment were also risk factors among boys only in two studies. Further, poor and ineffective parenting was found to be a risk factor, while positive parenting was a protective factor in two studies. Finally, no effect of negative peer or gang affiliation was evident from three available studies. A key limitation of the study was that all, but one study, relied solely on one source of data (parent report, or youth report), resulting in the problem of shared method variance. Poor or no alpha was also reported for four of the included studies.

**CU Traits and Treatment Outcomes**

Only one Asian sample investigated effects of intervention on CU traits and this was with a group of preschoolers in Israel \( (N = 209; \text{aged 2-5}) \) (see Table 2d). Participants were randomly assigned to intervention \( (n = 140) \) or control \( (n = 69) \) groups. In the intervention group, parents attended 14 weeks of group meetings,
which were supplemented by individual meetings. The sessions included skills to reduce ineffective parenting, strengthen parent-child relationship, improve parent self-regulation and enhance couple teamwork. The control group was a minimum intervention group, which received two consultations only, and referrals to local treatment services where necessary. Somech and Elizur (2012b) reported that CU traits reduced in the treatment group and this was maintained even at one-year follow up. Using the same sample, Elizur et al (2017) reported that the reduction in CU traits was mediated by reduction in ineffective parenting, which was measured by negative/inconsistent parenting, parental distress and parental helplessness. The main limitation of the study is its use of parent reports only.

Discussion

A systematic search of Asian studies on CU traits was conducted. This revealed 17 reported studies based on 15 samples. Findings from these studies allowed us to make some inferences about the current state of research on CU traits in Asian countries, and some suggestions on the possible direction of future research.

The first major question was whether CU traits are associated with increased severity of conduct problems. Findings from 10 studies provide preliminary evidence that CU traits are useful in Asian culture to classify children with more severe conduct problems, delinquency and aggression. This is consistent with general findings in other reviews that were predominantly based on Western studies (e.g., Frick et al., 2014; Longman et al., 2016). However, we also found that the available research in Asia was highly limited to cross-sectional studies, which did not allow for conclusions regarding causality. More research thus needs to be conducted in Asian culture to investigate the predictive validity of CU traits in longitudinal studies,
especially when controlling for initial conduct problem severity and comorbidity. There are also mixed findings on the relation between CU traits and reactive aggression, which warrant further investigation.

The second major objective of this review was to identify distinct neurodevelopmental emotion-related correlates of CU traits in Asian culture. The association between CU or psychopathic traits, and psychopathy-linked narcissism was most commonly studied, and a positive relation was reported in five out of six studies. This is consistent with available findings from Western countries (e.g., Barry, Frick & Killian, 2003; Kerig & Stellwagen, 2010; Lee-Rowland, Barry, Gillen & Hansen, 2017). It is thus difficult to interpret the one study that reported a relation in the opposite direction (Fung et al., 2009). A number of neurodevelopmental and emotion-related correlates were each reported in only one or two Asian studies. The limited evidence makes it difficult to draw any firm conclusion about their association with CU traits. However, we can infer that that there is no available evidence for cross-cultural differences when available findings are consistent with general findings from Western countries. It was reported that children and adolescents with high CU traits in Asian samples have reduced biological responses to emotional stimuli, abnormal brain responses during cognitive tasks, were less responsive to punishment when they were first primed to a reward-oriented response, and reported higher Machiavellianism. These findings were consistent with available studies from Western culture (e.g., de Wied et al., 2012; Finger et al., 2008; Fisher & Blair, 1998; Frick et al., 2003a; Kerig & Stellwagen, 2010; Isen et al., 2010; Lau & Marsee, 2013; O’Brien & Frick, 1996; White, Brislin, Meffert, Sinclair & Blair, 2013).

Other results were more mixed. Out of five studies that assessed anxiety/depression, only Fung et al (2009) reported a negative association between
CU traits and anxiety/depression that was consistent with existing findings in the Western culture (e.g., Andershed et al., 2002; Dolan & Rennie, 2007; Frick, Lilienfeld, Ellis, Loney & Silverthorn, 1999; Pardini et al., 2007; Roose et al., 2011). A positive association between CU traits or callousness and anxiety/depression was reported in three community samples (Eremsoy et al., 2011; Somech and Elizur, 2012a; Wong et al., 2014) while another study found no difference in anxiety/depression between an offender group with high CU traits and other subgroups, although this sample had very small subgroups (Law, 2012). Based on findings from Western samples, there were speculations that CU traits may buffer children from developing anxiety due to their lower levels of guilt and empathy. However, this relationship is often confounded by the opposite association between conduct problems and anxiety as children with conduct problems often experience higher anxiety due to related psychosocial problems (Keenan, Loeber & Green, 1999). For instance, Hipwell et al (2007) reported that conduct problems were positively associated with generalized anxiety problems, while CU traits were negatively associated with generalised anxiety problems, after controlling for conduct problems. The divergent relationships between CU traits, conduct problems and anxiety may thus have contributed to the inconsistent findings in this review. Further research would be needed to study CU traits and anxiety when controlling for conduct problems in Asian culture so as to ascertain a clearer understanding of the association between CU traits and anxiety in the Asian culture, and to determine if there are cultural differences. Furthermore, there is emerging research that within children with high CU traits, there are primary and secondary variants of CU traits that differ by their level of anxiety and this is an area worthy of future research too (e.g., Docherty, Boxer, Huesmann, O’Bien & Bushman, 2016; Kimonis, Frick, Cauffman, Goldweber
Mixed findings on the association between intelligence and CU traits (Law, 2012; Wong et al., 2014) also suggest that further testing is needed to better understand this relationship, especially when findings from Western countries are likewise mixed (e.g., DeLisi et al., 2011; Fontaine, Barker, Salekin & Viding, 2008; Loney, Frick, Ellis & McCoy, 1998; Salekin, Neumann, Leistico & Zalot, 2004; Vaughn et al., 2011). Lastly, more research was needed on the association between CU traits and resting heart rate, and mistrust/hostility considering the limited research on these associations (Raine et al., 2014; Somech & Elizur, 2012a; Wong et al., 2014).

Based on existing research, it is promising that a range of cognitive, biological and temperamental/personality correlates with CU traits have been investigated in Asian samples. There appears to be some support for similar neurodevelopmental and emotion-related correlates as those found in Western samples (e.g., reduced biological responses to emotional stimuli). However, there are mixed findings in other areas, such as anxiety/depression. This provides good reason for future research to further examine the relationship between anxiety and CU traits while controlling for conduct problems in the Asian culture, and also possibly investigate if primary and secondary variants of CU traits are similarly present in Asian countries. Additionally, this review highlights a lack of Asian studies on a number of neurodevelopmental and emotion-related correlates that has established associations with CU traits based on studies from Western countries (e.g., one’s responsiveness to fear in others, endorsement of more deviant goals in social situations, and lack of affective empathy). It may be worthwhile for future studies to investigate these factors to determine if findings from western countries are replicated in Asian culture. In addition, it is recommended that
future research investigate these factors while controlling for other risk factors, as existing studies are largely limited to simple correlation analysis in cross-sectional studies.

The third major finding from the review was on environmental risk processes associated with CU traits. Firstly, mixed findings were reported for social adversity in five studies. Taking into account strengths and limitations of studies, there is stronger evidence that low SES correlated with CU traits (Fung et al., 2009; Somech & Elizur, 2009; Wong et al., 2014). This supported other available findings in the Western culture that there was an association between CU traits and poor family backgrounds (e.g., Frick & Hare, 2001). Similarly, findings on an association between early separation, and insecure attachment with CU traits support other findings from the Western culture that disruption of caregiving in early life, deprivation of emotions, and poor attachment increase the risk of developing psychopathic traits (e.g., Campbell, Porter & Santor, 2004; Dadds, Jambrak, Pasalich, Hawes & Brennan, 2011; Farrington, 2007; Skilling, Harris, Rice & Quinsey, 2002). Parenting factors were reported in two studies and there was a significant relation between CU traits and different aspects of parenting (Elizur et al., 2017; Law, 2012). This is again consistent with findings for Western samples (Waller et al., 2013). However, both studies assessed parenting cross-sectionally, which does not provide any information on the relationship between CU traits and parenting over time. This is worthy of future research as Western studies have not only reported that parenting predicts CU traits over time (Pardini et al., 2007; Waller et al., 2012), but also that CU traits predict parenting (Hawes et al., 2011). Additionally, no research has considered if negative parenting practices are less proximal to the conduct problems of children with high versus low levels of CU traits, although this is an area with the most
consistent findings in the Western literature (e.g., Edens et al., 2008; Fanti & Centifanti, 2014; Hipwell et al., 2007; Pasalich et al., 2011; Wootton et al., 1997; Yeh et al., 2011). Finally, three Asian studies consistently reported no effect of peer influence or gang membership on CU traits (Ang et al., 2015; Chu et al., 2014; Law, 2012). This finding is somewhat surprising as Western studies have reported that children with high CU traits tend to have more friends who are involved in delinquency and antisocial behaviour (e.g., Kimonis, Frick, & Barry, 2004; Pardini & Loeber, 2008). There is thus a possibility of cultural differences whereby negative peer influence has a less significant role in Asian studies. However, the findings could also be contributed by a different meaning of gang membership in the Singapore context, as two out of the three studies measured gang membership. Future research will need to study this further in Asian samples.

The final question for this review is on treatment outcomes associated with CU traits. Only one Asian sample was found. There is evidence that CU traits are reduced in a treatment group of preschoolers, with improvements maintained at one-year follow-up (Somech & Elizur, 2012). This is consistent with findings from Western samples (e.g., Hawes et al., 2014). It is encouraging to know that effective intervention can target and reduce CU traits in Asian samples too. However, it is unclear if this finding extends to older age groups, where effect size was reportedly smaller (Hawes et al., 2014). Further, there is no available study on other important aspects of treatment, including whether CU traits are associated with clinical outcomes, and what are the clinical components that will be most effective for children with high CU traits. These are areas that future research on Asian samples can look into.
Findings for this review should be considered in light of its limitations. Firstly, there may be potential biases whereby non-significant findings are not published and hence not identified in the search. Additionally, conclusions of this review are based on available studies, which are limited by their study designs. Most of the studies are cross-sectional studies, which did not control for possible confounding variables. Poor internal consistency of measures, or no reported coefficient alpha, and shared method variance are also common problems.

In conclusion, it is promising to identify 15 Asian samples that have investigated CU or psychopathic traits. The strongest support is for the association between CU traits and a particularly severe presentation and trajectory of conduct problems. Distinct neurodevelopmental emotion-related correlates, and environmental risk factors associated with CU traits were also investigated. The available studies highlighted the importance and relevance of CU traits in Asian samples, and provided good reason for future research to continue improving our understanding of CU traits in Asian samples. This includes investigating correlates that have inconsistent findings, especially anxiety and delinquent peer influence, to determine if cultural differences are present. Further research is also needed in areas that have not been studied in Asian samples, such as the moderating role of CU traits in the relationship between parenting and conduct problems, and whether CU traits predict treatment outcomes. Future research will also benefit from improvements in study designs, such as longitudinal studies that control for possible confounding variables. The research in CU traits will be important in informing clinicians in Asian countries about clinical strategies to employ with heterogeneous subgroups of children with conduct problems.
CHAPTER 3
CALLOUS UNEMOTIONAL TRAITS AND THE RELATIONSHIP BETWEEN
HARSH PARENTING PRACTICES AND CONDUCT PROBLEMS IN
SINGAPOREAN FAMILIES
Persistent childhood conduct problems have been associated with substantial social and economic cost, and a broad range of mental health problems later in life (Kim-Cohen et al., 2009; Romeo et al., 2006). It is now understood that children with such problems may follow heterogeneous risk pathways characterized by somewhat distinct causal processes. One particularly influential model of these pathways distinguishes between children with conduct problems characterized by low versus high levels of callous-unemotional (CU) traits. These traits correspond to the affective component of psychopathy, as defined by a lack of remorse or guilt, a callous lack of empathy, a lack of concern about performance in important activities, and shallow or deficient affect. Much research has associated CU traits with a particularly severe and chronic trajectory of antisocial and aggressive behaviour, however this research has been limited largely to the United States, United Kingdom, Europe, and Australia (Frick et al., 2014). Relatively little is known about childhood CU traits in Asian cultures, or the extent to which they are associated with unique risk processes for conduct problems in Asian populations.

Conduct problems are understood to be highly embedded in the multiple settings or ecologies (e.g., family, school, peers) that are nested within a child’s broader environment, and mechanisms in the parent-child relationship are thought be particularly proximal to these problems (Hawes & Dadds, 2005). Evidence supports conceptualizations of these mechanisms based on social learning (operant) theory, which emphasize the parental modeling of aggression, and escalating cycles of parent-child coercion – or ‘reinforcement traps’ – maintained by escape-avoidance conditioning (Dishion & Patterson, 2006). There is growing evidence, however, that CU traits may play a role in moderating associations between quality of parenting and child conduct problems, and may differentiate risk pathways shaped by distinct environmental, genetic, and neurobiological factors (Fanti et al., 2016; Viding & McCrory, 2012).
One of the most consistent findings in this area has been that negative parenting practices appear to be less proximal to the conduct problems of children with high levels of CU traits, relative to those low in CU traits, yet evidence on the whole has been mixed (Waller et al., 2013). Findings that conduct problems develop somewhat independently of negative parenting among high-CU children have been reported in a range of studies (Edens et al., 2008; Fanti & Centifanti, 2014; Hipwell et al., 2007; Pasalich et al., 2011; Wootton et al., 1997; Yeh et al., 2011). For example, Pasalich et al (2011) reported that observed coercive parenting was significantly associated with increased severity of ODD symptoms in boys aged 4-to-12 years with low but not high levels of CU traits. Other studies, however, have not replicated this effect (Falk & Lee, 2011; Graziano et al., 2016; Kroneman et al., 2011; O'Connor et al., 2016).

There may be numerous explanations for these discrepant findings. Waller et al (2015) speculated that CU traits may potentially moderate the relationship between negative parenting and conduct problems in older but not younger children, suggesting that children with CU traits may become increasingly insensitive to the effects of punishment across development. Another explanation concerns the measurement of parenting and conduct problems in this area, which has often been based on broad positive/negative dimensions. It is possible that such interplay between negative parenting, CU traits, and conduct problems, may be somewhat specific to particular dimensions of negative parenting and particular dimensions of child conduct problems.

The likelihood of this is suggested by a number of studies. First, research has found CU traits to be differentially associated with distinct dimensions of negative parenting. For example, in a study of treatment mechanisms associated with change in CU traits following parent training, reductions in CU traits were found to be uniquely accounted for by reductions in maternal psychological aggression but not physical aggression (McDonald et al., 2011).
Psychological aggression has been defined as communication intended to cause psychological pain, and generally involves yelling and verbal threats (Vissing et al., 1991). Second, there is evidence that distinct forms of conduct problems are differentially associated with child and family-level risk processes. One of the most well-researched examples of this is proactive versus reactive aggression. Reactive aggression occurs in response to provocation, whereas proactive aggression is planned, goal-directed behaviour, instigated for anticipated rewards (Raine et al., 2006). Among children with conduct problems, CU traits have been associated with increased levels of both proactive and reactive aggression, with proactive aggression sometimes found to be largely unique to children with CU traits (Frick et al., 2014). Longitudinal research has found reactive, but not proactive aggression to be associated with negative (physically abusive) parenting (Dodge et al., 1997). Furthermore, in the only study to date that has examined CU traits as a moderator of associations between parenting and proactive versus reactive aggression, distinct associations with CU traits were found for each respectively (Yeh et al., 2011). Specifically, negative parental affect was associated with increased reactive aggression, but only among children low in CU traits. Conversely, among children with high levels of CU traits negative parental affect was associated with increased proactive aggression.

The aim of the current study was to examine CU traits as moderators of associations between negative parenting and conduct problems in Singaporean children. Two aspects of the study are particularly novel. First, we are aware of no previous studies to have examined interplay between quality of parenting, conduct problems, and CU traits in Asian/Chinese countries. Evidence of such interplay is critical to informing interventions that may better target the unique treatment needs of children with CU traits (see Hawes et al., 2014), and it cannot be assumed that evidence of such interplay generalizes across diverse cultures. For example, in previous research comparing African American and European American
mothers, corporal punishment was found to be positively related to aggression in European American children, but not African American children (Deater-Deckard et al., 1996). Likewise, evidence of cross-cultural variation associated with CU traits have begun to emerge in recent years, with a community sample of children from Hong Kong found to demonstrate higher scores on CU traits measures compared to a sample from United States (Fung et al., 2009). The authors suggested that the Chinese culture of suppressing emotional expression may have contributed to the increased levels of ‘unemotional’ behaviour.

Second, the measurement strategy of the current study was informed by evidence regarding heterogeneous associations between distinct forms of negative parenting and child outcomes. In terms of negative parenting, we examined psychological aggression, as well as minor and severe physical aggression. Measurement research has supported the distinction between forms of corporal punishment that are relatively mild (e.g., spanking, slapping) and those more severe forms of physical aggression (e.g., physical assault) (Feigelman et al., 2009), each of which have been associated with distinct dysfunction later in life (e.g., Afifi et al., 2006). Psychological aggression may often co-occur with these patterns of physically aggressive parenting, yet has likewise been associated with distinct child outcomes (e.g., Teicher et al., 2006). As noted already, this includes unique associations with CU traits (McDonald et al., 2011). In terms of conduct problems, we examined both reactive and proactive aggression. As noted, only one study, involving a community-based sample, has previously examined the interplay between parenting, CU traits, and proactive/reactive aggression, and found differential associations for each (Yeh et al., 2011). The current study is the first to examine this interplay in a sample with clinic-referred externalizing problems, and the first to incorporate both physical and psychological parental aggression within such an investigation.
Based on findings from previous studies on CU traits, parenting and conduct problems (e.g., Hawes et al., 2011; Pardini et al., 2007; Stormshak, Bierman, McMahon, & Lengua, 2000), it was hypothesized, first, that parental physical aggression (mild and severe) and psychological aggression would each be associated with increased conduct problem severity in Singapore children. Second, based on the findings of Yeh et al (2011), as well as evidence that suggest differences in heritability of conduct problems and emotional dispositions between children with high and low CU traits (e.g., Dadds et al., 2006; Viding & McCrory, 2012), it was hypothesized that CU traits would moderate associations between dimensions of negative parenting and child aggression, and that this interplay would differ across reactive versus proactive forms. Specifically, reactive aggression was predicted to be more strongly associated with negative parenting among children with low versus high levels of CU traits, whereas proactive aggression was predicted to be more strongly associated with negative parenting among children with high CU traits.

Method

Participants

Participants were \((N = 282)\) children and their caregivers, who were referred to the Child Guidance Clinics in Singapore for externalizing problems. Two Child Guidance Clinics are run by the Institute of Mental Health, the main psychiatric hospital in Singapore. They are located at the northeast and central region of Singapore and provide services for young patients (aged 18 years and below) with emotional and behavioural problems. The present study involved pre-treatment data collected from a sample of children and adolescents recruited as part of a larger prospective project investigating treatment outcomes. Inclusion criteria were (a) age 7 to 16 years; (b) primary diagnosis by attending physician of either a
disruptive behaviour disorder, i.e. Conduct Disorder (CD) or Oppositional Defiant Disorder (ODD), or attention deficit / hyperactivity disorder (ADHD), based on DSM-IV-TR (APA, 2000); (c) IQ of 70 or more. The sample of \(N = 282\) families comprised \(n = 247\) boys and \(n = 35\) girls (mean age 10.6 years; SD = 1.9). The higher ratio of boys to girls (87.6%) is similar to other studies on CU traits that recruited clinic-referred samples (e.g., Hawes & Dadds, 2005; Kolko & Pardini, 2010; Falk & Lee, 2011), and is consistent with evidence that conduct problems and ADHD are more common in males than females (e.g., Moffitt, 2001; Willcutt, 2012). With respect to diagnostic status, 86.2% met criteria for ADHD, 63.8% for ODD, and 13.1% for CD. 39.1% of children met criteria for 1 disorder, 51.9% met criteria for 2, and 9.1% met criteria for 3 disorders. The ethnic composition was 81.8% Chinese, 8.1% Indian, 6.6% Malay and 3.5% others. Caregivers were 75.1% mothers, 19.6% fathers, and 5.3% were others. Parents’ highest education level ranged from: primary level and below (mothers: 8.9%; fathers: 13.5%), to secondary/vocational (mothers: 46.4%; fathers: 41.4%), to pre-university / polytechnic (mothers: 23.0%; fathers: 19.8%), to university / postgraduate (mothers: 21.8%; fathers: 25.3%).

**Procedures**

All procedures used in this study were approved by Singapore’s National Healthcare Group Domain Specific Review Board (2008/00410). Families seeking treatment at the Child Guidance Clinic were referred to the research team if they received a primary diagnosis of ADHD, CD or ODD by their psychiatrist. Families were seen for a comprehensive baseline assessment, and data for this study was obtained from the baseline assessment. The nature of the research study and the requirements of the participants were explained and information sheets provided. Caregivers gave written informed consent for their own and their child’s
participation, and children provided written assent for their own participation. As part of the screening process, children completed the Wechsler Intelligence Scale for Children - Fourth Edition (WISC-IV; Wechsler, 2003), a test of general intellectual functioning for children aged 6 to 16 years. Four subtests from the WISC-IV (Vocabulary, Matrix Reasoning, Digit Span and Coding) were used in this study to provide an estimate of the child’s cognitive ability. Children and their caregivers completed test batteries over separate occasions to ensure that they did not find it overly demanding. Participants were given an inconvenience fee of S$30 for their participation in the study.

Measures

Conduct Problems. The Computerized Diagnostic Interview Schedule for Children – Version IV (C-DISC; Shaffer, Fisher, Lucas, Dulcan & Schwab-Stone, 2000) was conducted with caregivers. This is a structured interview designed to assess children and adolescents aged 6 to 17 years using DSM-IV diagnostic criteria status for externalizing disorders (CD, ODD and ADHD). Symptom counts were obtained from computerized scoring of the modules. Child aggression was measured through child self-report using the 23-item Reactive-Proactive Aggression Questionnaire (Raine et al., 2006). Proactive aggression is measured by 12 items (e.g., ‘had fights with others to show who was on top’), and reactive aggression is assessed by 11 items (e.g., ‘yelled at others when they have annoyed you’). Each child rated himself on each aggressive behaviour using a three-point scale (0 = never, 1 = sometimes, 2 = always). Good internal consistency and construct validity have been reported for the RPQ in Chinese samples (Fung et al., 2009). Alphas for the two subscales in this study were $\alpha = .88$ (reactive) and $\alpha = .86$ (proactive).
CU traits. The Antisocial Process Screening Device (APSD; Frick & Hare, 2001) is a 20-item questionnaire that assesses features related to psychopathic traits in children and adolescents. Each item is scored on a three-point scale (0 = not at all true, 1 = sometimes true, 2 = definitely true). This measure, which was completed by parents, provides a Total score on psychopathy, and three subscales of CU behaviour, Impulsivity and Narcissism.

While the CU subscale is made up of six items, four items from the parent-report were used instead for this study. Consistent with past research (e.g. McDonald et al., 2011), internal consistency for the original six-item CU subscale was poor ($\alpha = .38$). Two items (‘Your child does not show feelings or emotions’, and ‘Your child keeps the same friends’) were thus removed from the CU subscale for this study because they have been found to show poor factor loadings ($< 0.30$) in previous Chinese samples (e.g., Wang et al., 2015). The 4-item CU subscale selected for this study include ‘Your child is concerned about how well he/she does at school/work’, ‘Your child is good at keeping promises’, ‘Your child feels bad or guilty when he/she does something wrong’ and ‘Your child is concerned about the feelings of others’. Cronbach’s alpha for the 4-item CU subscale in the current sample was $\alpha = 0.61$ (mean inter-item correlation = .20). Criterion validity for the 4-item CU subscale was supported by a significant correlation between scores on this modified scale and severity of diagnostic symptoms of ODD and CD as measured by the C-DISC ($r = .27, p < 0.01$).

Parental aggression. Parental psychological aggression and physical aggression towards the child were assessed using the Psychological Aggression subscale, the Physical Assault (Mild), and the Physical Assault (Severe) subscales of the Conflict Tactics Scale (CTS; Straus, 1979). Children reported on the items, which included acts of psychological aggression (e.g., ‘insult/swear at you’, ‘stomp out of the room/house’, ‘threaten to hit, or throw something at you’), relatively minor acts of physical aggression (e.g., ‘throw something at you’, ‘push/grab/shove you’, ‘slap/spank you’) and more severe acts of physical
aggression (e.g., ‘kick/bite/hit you with a fist’, ‘hit you or try to hit you with something’, ‘beat you up’, ‘burn/scald you’). Each item is rated on a six-point scale (0 = never, 1 = once, 2 = twice, 3 = sometimes, 4 = frequently, 5 = most of the time). Alpha coefficients in this sample was $\alpha = .80$ for psychological aggression, $\alpha = .69$ for mild physical aggression and $\alpha = .81$ for severe physical aggression. The sum of the item scores was used for the analyses.

### Analytic Plan

We examined whether CU traits moderated the relationship between parental aggression and child aggression using six separate hierarchical regressions with child proactive aggression or reactive aggression as the dependent variable. Considering the high inter-correlations between the parental aggression measures ($r = .15 \ldots .70$), separate regression models were run for each measure of parental aggression (psychological aggression, mild physical aggression and severe physical aggression) as a precautionary measure against multicollinearity. For each of the model, Block 1 consisted of the demographic/structural family characteristics (child’s age, child’s gender, number of people living in the family, and father’s education level). In Block 2, we entered the main effects of CU traits and parental aggression (psychological aggression, mild physical aggression or severe physical aggression). In Block 3, we entered the product terms (CU traits x psychological aggression, CU traits x mild physical aggression, or CU traits x severe physical aggression) to test for interaction effects. Predictor variables in interaction terms, and the interaction terms (i.e. all variables in Blocks 2 and 3) were first centered (Aiken & West, 1991). Significant interaction effects were tested post-hoc using the simple slope analysis method (Cohen et al, 2003; Holmbeck, 2002). This was done by computing conditional moderator variables for each participant that corresponded to ±1 SD from the centred value,
and testing the significance of the independent variable (parental aggression) at high/low levels of the moderator variable (CU traits).

**Results**

**Descriptive Analyses**

Descriptive statistics and correlations between the key variables are listed in *Table 3*. Among the socio-demographic variables, child age was significantly correlated with number of ODD and CD symptoms only ($r = .18, p < .05$). Number of people living at home was significantly correlated with all measures of conduct problems, such that families in homes with more people reported greater externalizing problems ($r = .16 – .26, p < .05$). Neither child gender, nor ethnicity was significantly related to any of the study variables. Furthermore, none of the socio-demographic variables was significantly associated with any of the parental aggression measures.
Table 3 Descriptive Statistics and Correlation Among Primary Variables in Study 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>1. Child Age</td>
<td>1.00</td>
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<tr>
<td>2. Number of People Living at Home</td>
<td>0.01</td>
<td>1.00</td>
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<td>3. CU Traits (P)</td>
<td>0.12</td>
<td>0.09</td>
<td>1.00</td>
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<td>4. Parental Psychological Aggression (C)</td>
<td>-0.05</td>
<td>0.08</td>
<td>0.06</td>
<td>1.00</td>
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<tr>
<td>5. Parental Physical Aggression, Mild (C)</td>
<td>-0.03</td>
<td>0.11</td>
<td>-0.02</td>
<td>0.70**</td>
<td>1.00</td>
<td></td>
<td></td>
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<tr>
<td>6. Parental Physical Aggression, Severe (C)</td>
<td>-0.08</td>
<td>0.11</td>
<td>-0.03</td>
<td>0.58**</td>
<td>0.68**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Child Reactive Aggression (C)</td>
<td>0.08</td>
<td>0.26**</td>
<td>0.05</td>
<td>0.19**</td>
<td>0.15*</td>
<td>0.13</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Child Proactive Aggression (C)</td>
<td>0.07</td>
<td>0.23**</td>
<td>0.12</td>
<td>0.29**</td>
<td>0.22**</td>
<td>0.22**</td>
<td>0.60**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>9. C-DISC ODD and CD Symptoms (P)</td>
<td>0.18*</td>
<td>0.16*</td>
<td>0.27**</td>
<td>0.20**</td>
<td>0.16*</td>
<td>0.17*</td>
<td>0.27**</td>
<td>0.30**</td>
<td>1.00</td>
</tr>
<tr>
<td>M</td>
<td>10.60</td>
<td>4.81</td>
<td>4.86</td>
<td>11.61</td>
<td>4.54</td>
<td>4.59</td>
<td>8.06</td>
<td>3.50</td>
<td>16.5</td>
</tr>
<tr>
<td>SD</td>
<td>1.91</td>
<td>1.48</td>
<td>1.55</td>
<td>8.38</td>
<td>4.16</td>
<td>6.29</td>
<td>5.21</td>
<td>4.13</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Note: P = Parent report; C = Child report, * p<.05; ** p<.01; *** p<.001
With regard to child and family characteristics, the different measures of child conduct problems correlated significantly with each other ($r = .27 - .60, p < .01$). Likewise, the three forms of parental aggression correlated significantly with each other ($r = .58 - 0.70, p < .01$). Parental psychological aggression and mild physical aggression were significantly related to all measures of child conduct problems ($r = .15 - .29, p < 0.05$). This relationship was similar for severe parental physical aggression, except that it was not significantly related to reactive aggression. CU traits were significantly correlated with number of ODD and CD symptoms ($r = .27, p < .01$). There was no significant association between CU traits and any of the negative parenting measure.

**Moderator Analyses**

Six separate regression models were used to test for interaction between CU traits and parental aggression and the statistics are reported in Table 4. In the models testing predictors of child reactive aggression, number of people living at home was the only socio-demographic variable that showed significant main effect ($\beta = .26, SE = .25, p < .001; \beta = .24, SE = .26, p < .01; \beta = .24, SE = .26, p < .001$). After controlling for this and other socio-demographic variables, parental psychological aggression in the second block was still significantly associated with child reactive aggression ($\beta = .19, SE = .05, p < .05$). As such, a larger family and greater parental psychological aggression, were associated with increased levels of child reactive aggression. None of the interaction terms was significant and they were not probed further.
Table 4 *Predictors of Child Aggression in Six Separate Hierarchical Regressions*

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>Reactive (1)</th>
<th>Reactive (2)</th>
<th>Reactive (3)</th>
<th>Proactive (1)</th>
<th>Proactive (2)</th>
<th>Proactive (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Child gender</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.00</td>
<td>-0.04</td>
<td>-0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td>Child age</td>
<td>0.08</td>
<td>0.04</td>
<td>0.05</td>
<td>0.10</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>Father’s education level</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Number of people living at home</td>
<td>0.26***</td>
<td>0.24**</td>
<td>0.24***</td>
<td>0.23**</td>
<td>0.19**</td>
<td>0.19**</td>
</tr>
<tr>
<td>2</td>
<td>CU traits</td>
<td>0.02</td>
<td>0.06</td>
<td>0.06</td>
<td>0.08</td>
<td>0.12</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Parental psychological aggression</td>
<td>0.19*</td>
<td>-</td>
<td>-</td>
<td>0.26**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Mild parental physical aggression</td>
<td>-</td>
<td>0.11</td>
<td>-</td>
<td>-</td>
<td>0.20**</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Severe parental physical aggression</td>
<td>-</td>
<td>-</td>
<td>0.08</td>
<td>-</td>
<td>-</td>
<td>0.16*</td>
</tr>
<tr>
<td>3</td>
<td>CU x psychological aggression</td>
<td>-0.13</td>
<td>-</td>
<td>-</td>
<td>-0.11</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>CU x mild physical aggression</td>
<td>-</td>
<td>-0.05</td>
<td>-</td>
<td>-</td>
<td>-0.15*</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>CU x severe physical aggression</td>
<td>-</td>
<td>-</td>
<td>-0.03</td>
<td>-</td>
<td>-</td>
<td>-0.15*</td>
</tr>
</tbody>
</table>

Note: All parameters estimates are standardised betas. * p<.05; ** p<.01; *** p<.001. Due to strong correlations between the three parental aggression variables, each was examined in a separate regression model. As such, three versions of the model predicting reactive aggression were run, followed by three predicting proactive aggression, each with different parental aggression variables in blocks 2 and 3 (hence the blank cells).
In the prediction of child proactive aggression, a significant main effect was similarly seen for number of people living at home in all three regression models \((\beta = .23, SE = .19, p < .01; \beta = .19, SE = .19, p < .01; \beta = .19, SE = .19, p < .01)\). In the second block, significant main effects were seen for each of the parental aggression measure: psychological aggression \((\beta = .26, SE = .04, p < .001)\), mild physical aggression \((\beta = .20, SE = .07, p < .01)\) and severe physical aggression \((\beta = .16, SE = .05, p < .05)\). Thus, children from bigger families and who experienced greater parental aggression of any form, were found to be more likely to display greater proactive aggression. The interaction terms for mild physical aggression x CU traits \((\beta = -.15, SE = .05, p < .05)\), and severe physical aggression x CU traits \((\beta = -.15, SE = .03, p < .05)\) were also significant. Post-hoc probing using simple slopes analysis indicated that parental physical aggression (mild) was significantly associated with proactive aggression in children with low levels of CU traits only \((\beta = 0.36, SE = 0.11, p < 0.001)\). For children with high levels of CU traits, parental physical aggression (mild) was unrelated to child proactive aggression \((\beta = 0.03, SE = 0.11, p > 0.05; \text{see Figure 1})\). Similarly, parental physical aggression (severe) was significantly associated with proactive aggression in children with low levels of CU traits \((\beta = 0.20, SE = 0.07, p < 0.01)\), but not high levels of CU traits \((\beta = 0.01, SE = 0.06, p > 0.05; \text{see Figure 2})\). Compared to low-CU children, high-CU children therefore showed weaker associations between their own proactive aggression and exposure to parental physical aggression.
Figure 1

Interaction between CU traits and mild parental physical aggression in predicting child proactive aggression.

Note: CU = callous unemotional traits

Figure 2

Interaction between CU traits and severe parental physical aggression in predicting child proactive aggression.

Note: CU = callous unemotional traits
Discussion

Research into parenting influences on child conduct problems in Asian countries has been limited compared to that conducted in Western countries, especially with regard to interplay between parenting and CU traits. This study examined associations between dimensions of aggressive parenting, subtypes of child aggression, and CU traits, in Singapore. Support was seen for both hypotheses. First, children’s proactive and reactive aggression were directly associated with parental psychological aggression, as were symptoms of ODD/CD. All indices of conduct problems were also directly associated with parental physical aggression (mild or severe), yet associations with parental physical aggression were somewhat less robust when controlling for socio-demographic covariates. Specifically, physical aggression explained unique variance in children’s proactive aggression, yet only psychological aggression was uniquely associated with both proactive and reactive aggression. These unique associations with dimensions of parental aggression were independent of a robust effect for the number of individuals residing in the family home, which itself was uniquely associated with severity of conduct problems. This is consistent with international research regarding overcrowding and risk for delinquent behaviours (e.g., Farrington & Loeber, 1999; Pardini, Waller & Hawes, 2015).

The findings that both mild and severe physically aggressive parenting predicted proactive aggression add to the extensive evidence base associating corporal punishment (e.g., spanking) with adverse child outcomes (e.g., Gershoff, 2002; Gershoff & Grogan-Kaylor, 2016). In addition, our finding of a unique association between such parenting and proactive aggression, but not reactive aggression, may partially explain why some reviews have only found small association between corporal punishment and negative child behavioural outcomes (e.g., Ferguson, 2013;
Paolucci & Violato, 2004). The finding that parental physical aggression was only associated with reactive aggression at the bivariate level is consistent with evidence that such effects for corporal punishment are notably reduced when controlling for covariates associated with social adversity (Ferguson, 2013). Additionally, the lack of unique associations between physically aggressive parenting and children’s reactive aggression in this sample might be explained by cultural factors, as suggested by previous evidence of culture as a moderator of such parenting influences. For example, in a study of mother-child dyads from China, India, Italy, Kenya, the Philippines, and Thailand, Lansford et al (2005) found that those countries demonstrating the weakest associations between physical discipline and child behaviour problems were those in which physical discipline was most culturally accepted. It is therefore noteworthy that in the context of Singapore where corporal punishment is widely accepted (Elliot, Tong & Tan, 1997) and caning is used as a judicial punishment, parental physical aggression was uniquely associated with proactive child aggression. Further research is needed to better understand distinct relations among specific domains of parental aggression and child aggression, especially in Singapore and other Asian countries.

Findings from this study are consistent with previous evidence to suggest that psychological aggression may be a particularly damaging form of parental aggression with regard to children’s behavioural adjustment (Claussen & Crittenden, 1991; Crittenden et al., 1994; Hart et al, 1998). In a retrospective study, Miller-Perrin et al (2009) similarly found that psychological aggression was the best predictor of psychological outcome when demographic variables and frequency of parent aggression variables were considered simultaneously. As speculated by previous researchers, the impact of physical aggression in our sample may have been
overshadowed by the stronger effects for psychological aggression, which may be somewhat more pervasive due to the many forms it may take (e.g., McDonald et al., 2011). The data add to this evidence regarding the importance of psychological aggression to child outcomes, and highlight it as a priority for future research into family-based influences on conduct problems in Singapore and other Asian cultures.

The second major finding of the study was that CU traits moderated the association between aggressive parenting practices and child aggression. Specifically, physically aggressive parenting was more strongly associated with proactive aggression among children low in CU traits than those with high levels of CU traits. This interplay was replicated across both mild and severe forms of physically aggressive parenting. It is noteworthy that findings from this study were at odds with the one previous study to have examined this moderator effect in relation to specific forms of child aggression (Yeh et al., 2011). Aside from potential cross-cultural differences, it is unclear whether methodological differences between these studies (e.g., use of community versus clinical samples; investigation of negative parental affect versus aggression) may account for the distinct results. In particular, Yeh et al (2011) investigated the affective component of parenting, which refers to the negative emotional cues by parents. In contrast, our study measured behavioural components of negative parenting. Our results thus suggest that affective and behavioural components of parenting may have very different associations with CU traits. Findings from this study were nonetheless consistent with the moderator effect that has been reported for CU traits and negative parenting in a number of previous studies in Western cultures (e.g., Edens et al., 2008; Hipwell et al., 2007; Koglin & Petermann, 2008; Oxford et al., 2003; Pasalich et al., 2011; Wooton et al., 1999). Our findings are also consistent with findings that children with high CU traits are less
responsive to punishment cues and show reduced responses to negative stimuli (e.g., Frick et al., 2003a). As a result, they may be less influenced by parental physical aggression when compared to children with low CU traits. The notion that negative parenting practices may be less proximal to conduct problems among children with CU traits is also thought to account in part for the reduced effectiveness of family-based treatments that has often been reported for youth with conduct problems and high levels of CU traits (see Hawes et al., 2014). Given the finding of such an effect in this sample, there is justification for future research to further examine the relationship between CU traits and treatment outcomes among children with conduct problems in Asian countries.

Levels of CU traits among the children in this Asian sample were positively associated with diagnostic severity of ODD/CD symptoms, consistent with the established association reported for child and adolescent samples in Western cultures (Asscher et al., 2011; Longman, et al., 2016). Surprisingly, however, CU traits were not associated with severity of either proactive or reactive aggression, both of which have been found to occur at increased levels among youth with CU traits in previous studies (Frick et al., 2014). The possibility that this may reflect cultural differences in presentations of antisocial behaviour among Asian youth with CU traits warrants attention in future research. Results regarding the relationship between parenting and CU traits likewise raise questions regarding cross-cultural differences. In contrast to the association between negative parenting and CU traits that has often been reported for Western samples (Waller et al., 2013), we found no relationship between CU traits and any of the three forms of parental aggression examined. It should be noted, however, that a number of previous studies, including those with clinical samples, have likewise found measures of negative parenting to be unrelated to CU traits (e.g.,
Graziano et al., 2016; Hawes & Dadds, 2005; Pasalich et al., 2011; Vitacco et al., 2003). Other studies have found negative and hostile parenting to be associated with CU traits only under specific conditions, such as in the presence of parental depression (Childs et al., 2014) and family chaos (Kahn et al., 2016). Further research regarding interplay between parenting and CU traits in Asian cultures is needed to better understand such effects.

These findings should be considered in light of several limitations. The use of cross-sectional data precludes interpretations regarding causality, and bidirectional parent-child influences. As such, longitudinal research is needed to examine the transactional dynamics between dimensions of aggressive parenting practices, child aggression, and CU traits that may play out over time in Asian cultures. Additionally, our investigation of parenting focused exclusively on forms of parental aggression, and it is possible that other unexamined parenting processes (e.g., parental warmth, emotion socialization) may be more important in explaining CU traits in this population. This can be considered a limitation, given some emerging evidence that compared to negative parenting, positive parenting may be more robustly associated with CU traits (e.g., Muratori et al., 2016). With regard to measurement issues, previous measurement research investigating the use of the CTS to measure child maltreatment in Chinese families has found that child reports of severe violence may be advantageous given that parents in these families appear to often under-report such maltreatment (Chan, 2012). As such, our collection of child-reports on the measure can be considered a strength of the current study. At the same time, the various other dimensions of parenting previously examined in relation to CU traits have rarely been measured by child reports (e.g., Vitacco et al. 2003; Yeh et al., 2011), thereby limiting the ease with which our findings can be compared with those of other studies. Future
research would benefit from the use of multi-informant parenting data. It would also benefit from a greater use of observational and multi-method approaches to indexing parenting, which has likewise been limited (e.g., Pasalich et al., 2011), in addition to the incorporation of multi-method measurement.

To our knowledge, this study is the first to examine associations between CU traits, negative parenting, and conduct problems, in an East Asian sample. Findings from this thesis are consistent with the notion that among children in Singapore with clinically-severe conduct problems, those with high versus low levels of CU traits may follow risk pathways in which somewhat distinct parenting processes are implicated. CU traits were not only associated with increased severity of conduct problems, but moderated associations between physically aggressive parenting and children’s proactive aggression. These findings also point to specific questions for future cross-cultural research that may inform clinical strategies for heterogeneous subgroups of children with conduct problems in countries beyond those that have been the predominant focus of research to date.
CHAPTER 4
LONG-TERM BI-DIRECTIONAL EFFECTS OF CALLOUS UNEMOTIONAL TRAITS AND HARSH PARENTING IN SINGAPOREAN FAMILIES
As addressed throughout the earlier sections of this thesis, the subgrouping of children with conduct problems based on high versus low levels of callous-unemotional (CU) traits (i.e., a lack of remorse and empathy, and shallow affect) has received much support in recent years. There is significant evidence that children with high versus low levels of CU traits follow unique risk pathways, and that high levels of CU traits are associated with more severe and chronic antisocial and aggressive behaviour (see Frick et al., 2014). Additionally, there is evidence that CU traits are associated with relatively high stability over time (e.g., Barry et al., 2008; Dadds et al., 2005; Frick et al., 2003a; van Baardewijk et al., 2011; Willoughby et al., 2011). For instance, Frick et al (2003) reported the overall stability estimate (average Intraclass Correlation Coefficient; ICC) of parent-reported CU traits in a sample of non-referred youths across four years. The overall stability estimate was $ICC = .90$ ($p < .001$). Barry et al (2008) reported similar results in a sample of at-risk children aged nine to 12, with a 3-year overall stability estimate of $ICC = .83$ ($p < .001$). In a community sample of children aged four to nine, Dadds et al (2005) reported moderate stability of CU traits over a 1-year period ($r = .55$). Willoughby et al (2011) similarly assessed the stability of CU traits in a group of young children at 36-month, and 60-month, and stability of CU traits was found to be relatively high, and comparable to that of ADHD and ODD even at a young age ($ADHD\phi = .79$, $ODD\phi = .69$, $CU\phi = .84$, all $p < .0001$). These findings are consistent with findings of a genetic influence on CU traits (Viding et al., 2005), and moderate to high levels of heritability of CU traits reported in twin studies (Viding & McCrory, 2012).

The Coercion Theory (Patterson, 1982) describes a reciprocal relationship between parenting and child conduct problems, whereby parent and child are involved
in ‘reinforcement traps’. Escalations in coercion exchanges are mutually reinforced and become increasingly entrenched over time. This is supported by studies that have reported a reciprocal effect between parenting practices and conduct problems (e.g., Brown et al., 2017; Burke et al., 2009). For instance, Burke et al (2008) found that not only did parenting practices, specifically timid discipline, predict conduct problems, but timid discipline also predicted changes in conduct problems. Importantly, there is growing research that has investigated if there may be a similar reciprocal relationship between CU traits and parenting practices (Brown et al., 2017; Childs et al., 2014; Hawes, et al., 2011; Muñoz et al., 2011; Muratori et al., 2016; Salihovic et al., 2012; Waller et al., 2014).

Hawes et al (2011) measured CU traits and different parenting practices (inconsistent discipline, punishment, parental involvement, positive parenting, poor monitoring) in a community sample (aged 3-10). Reciprocal effects were reported between CU traits and parental involvement only. Salihovic et al (2012) collected data over five time points from a community sample of adolescents aged 13 to 15. There was a significant bidirectional association between CU traits and parents’ negative reaction to disclosure only. On the other hand, Childs et al (2014) followed a sample of 120 aggressive children over four years, and no reciprocal association was found between CU traits and parenting practices. Instead, only corporal punishment and poor supervision significantly predicted changes in CU traits. Most recently, Brown et al (2017) measured poor monitoring and positive parenting in a sample of preschoolers at age three, and again at age six. Again, no reciprocal effect was found for both parenting measures and CU traits. Instead, they found that poor monitoring at age three predicted CU traits at age six, while CU traits at age three predicted positive parenting at age six.
Findings on the bidirectional associations between CU traits and parenting were thus inconsistent. It may be the case that associations are influenced by the particular dimension of parenting measured. Burke et al (2008) highlighted the importance of considering different dimensions of parenting when they reported different associations between distinct measures of parenting and conduct problems. The current evidence on CU traits also suggests that there may be differences dependent on the dimension of negative parenting. Specifically, bidirectional association was reported between CU traits and parents’ negative reactions to disclosures, but not for other dimensions of negative parenting, e.g. poor monitoring, inconsistent discipline, anger outbursts, coldness-rejection (Brown et al., 2017; Hawes, et al., 2011; Salihovic et al., 2012; Waller et al., 2014). There is thus a need for future research to further examine bidirectional associations for different dimensions of negative parenting.

The major aims of this study were to examine the stability of CU traits in Singaporean children across middle to late childhood, and to test for bidirectional associations between CU traits and negative parenting during this period. There are a few novel aspects of this study. First, research from Asian countries on CU traits are limited and we are not aware of any previous study that has examined the long-term stability of CU traits, or the bidirectional associations between harsh parenting and CU traits in an Asian sample. Among studies that examined direct associations between CU traits and negative parenting, Elizur et al (2017) conducted an intervention study with pre-schoolers in Israel and reported that CU traits correlated with negative/inconsistent parenting concurrently. On the other hand, Vitacco et al (2003) reported no cross-sectional association between inconsistent discipline and CU traits in a Hispanic sample. There have also been previous reports of different
associations between harsh parenting and conduct problems across different cultures (e.g., Lansford, 2010). This is coupled with emerging evidence of cross-cultural variation for CU traits, with higher CU traits scores reported for a Hong Kong community sample compared to a sample from United States (Fung et al., 2009). Research in Asian countries, in particular, is needed to understand if existing evidence from western countries generalizes to Asian cultures. The findings will help inform intervention research concerning the unique treatment needs of children with CU traits in different cultures. The current study is thus significant as the first Asian study to measure child and adolescent CU traits over a lengthy (six-year) period, and to investigate the bidirectional relationships between negative parenting and CU traits in such a culture using prospective data.

Second, the current study is the first to incorporate both physical and psychological parental aggression in the investigation of bidirectional associations between parenting and CU traits. Differential associations between CU traits and distinct dimensions of harsh parenting were reported in a study of treatment mechanisms associated with psychopathic traits. Specifically, McDonald et al (2011) found that reductions of child psychopathic traits were uniquely accounted for by reductions in maternal psychological aggression, but not physical aggression. However, a limitation of the study by McDonald et al (2011) is that they combined items on mild physical aggression and severe physical aggression together to form a physical aggression scale. Straus (1987) had said that this was not a very useful scale as it combined items with very different severity of violence and includes more permissive acts of aggression, as well as highly dangerous and abusive acts. Our study thus aims to improve upon the study by MacDonald and colleagues, by examining more specific dimensions of harsh parenting. In particular, we aim to investigate...
bidirectional association between CU traits and psychological aggression, and CU traits and corporal punishment.

The theoretical basis of this study was thus derived from a comprehensive review of existing findings of CU traits (e.g., Dadds et al., 2005; Frick et al., 2003; Salihovic et al., 2012). It was hypothesized, first, that CU traits would remain moderately stable over a period of six years (e.g., Barry et al., 2008). Second, based on evidence of bidirectional associations between CU traits and negative parenting (Salihovic et al., 2012), it was predicted that there would be bidirectional dynamics between CU traits and negative parenting, measured by psychological aggression and physical punishment.

Method

Participants

Participants were \( n = 60 \) children and their caregivers who were referred to the Child Guidance Clinics in Singapore for externalizing problems. This is a subsample of the 282 participants from the earlier study reported in Chapter 3, and comprises participants of the earlier study who agreed to participate in the second part of the study. No additional selection criterion was used. The present study thus involved pre-treatment data (Time 1) of 60 participants collected from them as part of a larger prospective project investigating treatment outcomes at Time 1, as well as additional data collected from these 60 participants four to seven years \( (M = 6.05 \text{ years}) \) after their initial pre-treatment assessment (Time 2). The sample of \( n = 60 \) families comprised \( n = 51 \) boys and \( n = 9 \) girls. At Time 1, the participants ranged in age from seven to 15 years (mean age 10.2 years; SD = 1.6). At Time 2, the
participants’ age range was 12 to 21 years (mean age 16.0 years; SD = 2.0). With respect to diagnostic status at Time 1, 91.8% met criteria for ADHD, 66.7% for ODD, and 6.7% for CD. 35.7% of children met criteria for 1 disorder, 58.9% met criteria for 2, and 5.4% met criteria for 3 disorders. The ethnic composition was 79.3% Chinese, 12.1% Indian, 5.2% Malay and 3.4% others. Parents’ highest education level ranged from: primary level and below (mothers: 8.9%; fathers: 9.8%), to secondary/vocational (mothers: 44.6%; fathers: 33.3%), to pre-university / polytechnic (mothers: 23.2%; fathers: 27.4%), to university / postgraduate (mothers: 23.2%; fathers: 29.4%). A series of analyses of variance comparing the sub-sample used in this study, and the rest of the initial sample \((n = 222)\) not included in this study, revealed no differences on demographic variables, or pre-treatment measures of conduct problems or parenting.

**Procedures**

All procedures used in this study were approved by Singapore’s National Healthcare Group Domain Specific Review Board (2008/00410, 2016/00607). The procedures for Time 1 are identical to the earlier study and are detailed in Chapter 3. Briefly, participants were recruited as part of a broader project that included a randomized controlled trial comparing four treatment conditions, all of which included treatment as usual (monthly parent management training across a period of six months) plus additional components (omega-3 only, placebo only, social skills training and omega-3, social skills training and placebo). Results, which are currently being prepared for publication, indicated no differences between these treatment conditions on the key variables examined in this study. As such, participants were
collapsed across the original treatment conditions for the purpose of the current study. This approach is consistent with that previously used by Kolko and Pardini (2010), who likewise examined long-term prospective associations between CU traits and variables among children who were originally randomised to distinct intervention conditions. Additionally, families who participated in the intervention study and consented to be contacted for future research were contacted and invited to participate in this current longitudinal study. Out of 154 families who consented to be re-contacted for future research, 60 families agreed to participate in this study. This Time 2 testing took place four to seven years after Time 1 (initial assessment) testing. Both caregivers and children were invited for a one-time assessment visit at Time 2, at which time full written consent and assent were obtained, and test batteries completed. Families were given an additional S$25 for their participation in the follow-up study.

**Measures**

*Conduct Problems.* The Computerised Diagnostic Interview Schedule for Children – Version IV (C-DISC; Shaffer et al., 2000) was conducted with caregivers at Time 1 only to obtain symptom count for externalizing disorders (CD, ODD and ADHD). Caregivers also completed the Child Behaviour Checklist (CBCL; Achenbach, 1991) that assesses a range of child behavioural and emotional problems. Scores range from 0 (not true) to 2 (very true or often true). The CBCL was administered to caregivers at Time 1. Dependent on the age of the child at Time 2, caregivers completed the CBCL if the child was below 19 years, or the Adult Behaviour Checklist (ABCL; Achenbach & Rescorla, 2003) if child was 19 years and
above. Raw scores for 18 common items on the externalising behaviour scale between the CBCL and ABCL were used for this study. This included items such as ‘argues a lot’, ‘breaks rules at home, school, or elsewhere’. Internal consistency for the 18 items were $\alpha = .87$ (Time 1), and $\alpha = .89$ (Time 2).

**CU traits.** The Antisocial Process Screening Device (APSD; Frick & Hare, 2001) is a 20-item questionnaire that assesses features related to psychopathic traits in children and adolescents. Both caregiver and child completed the APSD, and the best estimate approach was used in this study by using the higher score between caregiver and child for each item. While the CU subscale is made up of six items, five items were used instead for this study. This was because of poor internal consistency for the six-item CU dimension at Time 1 ($\alpha = .51$) and Time 2 ($\alpha = .35$), which was similar to findings in past research (e.g., McDonald et al., 2011). Removal of one item (‘You do not show feelings or emotions’) resulted in an improved internal consistency ($\alpha = .62$; mean inter-item correlation = .24) at Time 1, and Time 2 ($\alpha = .57$; mean inter-item correlation = .21). This was supported by findings from previous studies, which have reported poor performance of this item (Li et al., 2017; Wang et al., 2015). For instance, Li et al (2017) reported poor factor loading of this item (< 0.30) in a Singaporean sample. The greater tendency to suppress emotional expression in the Chinese/Asian culture may also have contributed to this item not being interpreted as CU traits in our sample (Fung et al., 2009; Yunus, 2005). The five-item CU subscale selected for this study thus included ‘You care about how well you do at school/work’, ‘You are good at keeping promises’, ‘You feel bad or guilty when you do something wrong’, ‘You are concerned about the feelings of others’ and ‘You keep the same friends’. Measurements were conducted at Time 1 and Time 2.
Negative Parenting. Two forms of negative parenting were examined: psychological aggression and physical punishment. These were assessed using the Psychological Aggression subscale and the Physical Aggression (Mild) subscales of the Conflict Tactics Scale (CTS; Straus, 1979). Children reported on the items at Time 1 and Time 2, which included acts of psychological aggression and relatively minor acts of physical aggression. Details of these two subscales scales are provided in Chapter 3. Coefficient alpha in this sample were $\alpha = .83$ (Time 1) and $\alpha = .75$ (Time 2) for psychological aggression, and $\alpha = .76$ (Time 1) and $\alpha = .82$ (Time 2) for physical punishment.

Results

Descriptive Analyses

Descriptive statistics and key correlations between key variables are presented in Table 5. Among the socio-demographic variables, number of people living at home was significant correlated with Time 1 conduct problems ($r = .29, p < .05$), and Time 1 physical punishment ($r = .28, p < .05$), indicating that families with more people were more likely to report greater use of physical punishment and more severe conduct problems at Time 1. The other socio-demographic variables, namely child gender, age, ethnicity and father’s education level, were not significantly related to any of the study variables. Correlation between Time 1 and Time 2 measures of conduct problems was strong ($r = .59, p < .001$). This indicated that there was moderate stability of conduct problems over the period measured. Psychological aggression and physical punishment correlated significantly with each other at both Time 1 ($r = .76, p < .001$), and Time 2 ($r = .73, p < .001$), representing a high level
of co-occurrence between the different types of negative parenting. Additionally, conduct problems correlated with both psychological aggression ($r = .27, p < .05$), and physical punishment ($r = .49, p < .001$), at Time 2. CU traits were not significantly related to any of the other measures at the bivariate level\(^1\).

\(^{1}\) Although CU traits were not associated with Time 1 measures of conduct problems, they were significantly associated with ODD symptom scores (C-DISC) at post-treatment, after controlling for child age, number of people at home, and Time 1 CBCL externalizing behaviours.
Table 5 Descriptive Statistics and Correlations between Key Variables in Study 3

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>7</th>
<th>8</th>
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<th>10</th>
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<td>-.19</td>
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<td></td>
</tr>
<tr>
<td>4. Time 2 CU Traits (PC)</td>
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<tr>
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<td>-.21</td>
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<td>.10</td>
<td>.76**</td>
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<td>10. Time 2 Physical Punishment (C)</td>
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<td>-.03</td>
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<td>.11</td>
<td>.49**</td>
<td>.25</td>
<td>.73**</td>
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<td>1.88</td>
<td>6.46</td>
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<td>.89</td>
<td>.83</td>
<td>.75</td>
<td>.76</td>
<td>.82</td>
</tr>
</tbody>
</table>

*Note: P = Parent report, C = Child Report, PC = combination of parent and child, CU = callous-unemotional, * p < 0.05, ** p < 0.01.*
Stability of CU Traits

Paired samples t-test was conducted to compare CU traits at the two time points. CU traits at Time 1 were 1.38 points higher than CU traits at Time 2, reflecting a significant difference between CU traits at Time 1 and Time 2 ($t_{55} = 3.86$, $p < .001$). Standardised mean differences (Cohen’s $d$) were also calculated to show the change between Time 1 to Time 2, and the change in CU traits was in the order of a medium effect size ($d = .69$). There was however no significant correlation between CU traits at Time 1 and Time 2 ($r = .04$, $p > .05$). Results thus showed low stability for CU traits over a six-year period. In comparison, externalising behaviours at Time 1 were 2.63 points higher than externalising behaviours at Time 2. There was thus a significant difference between externalising behaviours at Time 1 and Time 2 ($t_{52} = 3.25$, $p < .005$), and the change was in the order of a large effect size ($d = .85$). There was a significant correlation between externalising behaviours at Time 1 and Time 2 ($r = .59$, $p < .001$).

Post-hoc analyses were conducted to further investigate the instability of CU traits. A median split was performed on CU scores at pre-treatment and cases were categorised as “Stable-Low CU” if scoring below this median cut-off score of 7 at both time points. Cases were classified as “Stable-High CU” if scoring 7 points or higher at both time points. Cases were classified as “Decreasing CU” if scoring 7 points or higher at Time 1, and less than 7 points at Time 2. “Increasing CU” refers to cases that were scoring below 7 points at Time 1, and scoring 7 points or higher at Time 2. Based on the criteria, the proportion in each group was: “Stable-Low CU” ($n = 17$; 28%), “Stable-High CU” ($n = 11$; 18%), “Increasing CU” ($n = 7$; 12%) and “Decreasing CU” ($n = 26$; 43%). Paired samples t-test was conducted to compare CU
Bi-Directional Association between CU traits and Negative Parenting

Predictors of CU traits at Time 2 were investigated using a hierarchical linear regression. Block 1 comprised socio-demographic variables (age, number of people living at home), Time 1 conduct problems and Time 1 CU traits. Block 2 consisted of the Time 1 negative parenting measure. Due to the high inter-correlations between psychological aggression and physical punishment, we ran separate regression models for each measure of negative parenting. The Variance Inflation Factor (VIF) (Velleman & Welsch, 1981) was also calculated for each model to check that they were not affected by multicollinearity. There is no multicollinearity if the VIF is between 1 and 10 (Belsley, Kuh, & Welsch, 1980). Among all the regressions conducted (including those described later), VIF was consistently less than 2.

In the model testing psychological aggression as a predictor of Time 2 CU traits, there was no significant effect for any of the variables in Block 1. After controlling for these variables, Time 1 psychological aggression in the second block was still significantly related to Time 2 CU traits ($B = .07, SE B = .03, \beta = .36, p < .05$). As such, parental psychological aggression uniquely predicted changes in CU traits even after controlling for socio-demographic variables, and Time 1 conduct traits at the two time points for each subgroup. On one hand, there was no significant difference between CU traits at Time 1 and Time 2 for the stable groups: “Stable-Low CU” group ($t_{11} = 1.25, p > .05$) and “Stable-High CU” group ($t_{10} = .76, p > .05$). On the other hand, significant difference was found for the other two groups: “Increasing CU” group ($t_6 = -5.7, p < .001$), and “Decreasing CU group” ($t_{25} = 8.29, p < .001$). Result thus showed that stability of CU traits varied.
problems. The other model tested physical punishment as a predictor of Time 2 CU traits. None of the variable in the first or second block of the model showed a significant effect. Results are presented in Table 6.
Table 6

**Predictors of CU traits in Two Separate Hierarchical Regressions**

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>β</td>
<td>B</td>
<td>SE</td>
<td>β</td>
</tr>
<tr>
<td><strong>Block 1</strong></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.08</td>
<td>.20</td>
<td>-.06</td>
<td>-.11</td>
<td>.21</td>
<td>-.08</td>
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<tr>
<td>No. of people living at home</td>
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<td>.26</td>
<td>-.09</td>
<td>-.10</td>
<td>.27</td>
<td>-.06</td>
</tr>
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<td>.13</td>
<td>.14</td>
<td>.13</td>
<td>.10</td>
<td>.15</td>
<td>.10</td>
</tr>
<tr>
<td>Time 1 conduct problems</td>
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<td>.05</td>
<td>.21</td>
<td>.06</td>
<td>.05</td>
<td>.21</td>
</tr>
<tr>
<td><strong>Block 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological aggression</td>
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<td>.03</td>
<td>.36*</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Physical punishment</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.08</td>
<td>.07</td>
<td>.19</td>
</tr>
</tbody>
</table>

*Note:* *p* < 0.05, B = unstandardized beta, SE = Standard Error of unstandardized beta, β = standardized beta, CU = callous-unemotional. Separate regression models were conducted for psychological aggression and physical punishment due to strong correlations between the harsh parenting variables, There are thus two versions of the models predicting Time 2 CU traits, with either Time 1 psychological aggression or physical punishment in block 2 (hence the blank cells).

Predictors of negative parenting at Time 2 were similarly examined using hierarchical linear regression. Separate regression models were executed for each of the negative parenting domain (psychological aggression, physical punishment). In each model, dependent variable was the Time 2 measure of the respective parenting domain, with the Time 1 measure of the respective parenting domain included in Block 1. Other variables in Block 1 were socio-demographic variables (age, number of people living at home) and Time 1 conduct problems. Block 2 consisted of CU traits at Time 1. No significant main effect was found for any of the variable in Block 1 or Block 2 in both hierarchical regressions. This indicated that none of the variable
predicted changes in negative parenting. Results are presented in Table 7.

Table 7

Predictors of Negative Parenting in Two Separate Hierarchical Regressions

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Time 2 Psychological Aggression</th>
<th>Time 2 Physical Punishment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
</tr>
<tr>
<td><strong>Block 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.13</td>
<td>.68</td>
</tr>
<tr>
<td>No. of people living at home</td>
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<td>.89</td>
</tr>
<tr>
<td>Time 1 conduct problems</td>
<td>.06</td>
<td>.16</td>
</tr>
<tr>
<td>Time 1 Psychological aggression</td>
<td>.05</td>
<td>.10</td>
</tr>
<tr>
<td>Time 1 Physical punishment</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Block 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1 CU traits</td>
<td>.08</td>
<td>.49</td>
</tr>
</tbody>
</table>

*Note:* *p* < 0.05, B = unstandardized beta, SE = Standard Error of unstandardized beta, β = standardized beta, CU = callous-unemotional. Two separate regression models were conducted with either psychological aggression or physical punishment at Time 2 as the dependent variable. For each model, only the corresponding negative parenting domain was included in Block 1 (hence the blank cells).
Discussion

This study investigated the stability of CU traits, and the bidirectional relationship between CU traits and negative parenting in a clinic-referred sample from Singapore. Contrary to predictions that CU traits would be moderately stable over a six-year period, our sample showed low stability of CU traits. 43% of the sample was placed in the upper half of the distribution of CU traits at Time 1, but dropped below the median cut-off at Time 2. Additionally, 12% of the sample showed an increase in CU traits from below the median cut-off at Time 1, to above the cut-off at Time 2. Long-term change in CU traits was uniquely predicted by parental psychological aggression, and this was independent of associations with socio-demographic variables and conduct problems. There was however no child-driven effect of CU traits predicting change in psychological aggression. There was also no significant association between CU traits and physical punishment in either direction.

The study’s findings on the poor stability of CU traits run contrary to a number of studies in the literature that reported moderate to high levels of stability of CU traits (e.g., Dadds et al., 2005; Frick et al., 2003; Kolko et al., 2009). There are a few possible explanations for this. First, past findings on the stability of CU traits are largely based on community samples. A possible reason for the different findings in our study may thus be the different sample type as our study is based on a clinic-referred sample. Considering this, it is worthwhile to note that intervention studies have reported that CU traits show malleability to treatment (e.g., Hawes & Dadds, 2007; Kolko et al., 2009; McDonald et al., 2011; Somech & Elizur, 2012). For instance, Hawes and Dadds (2007) reported that a subset of their sample showed a reduction in CU traits from pre-treatment to post-treatment and 6-month follow-up. Kolko et al (2009) also found that there was a reduction in teacher-reported CU traits
post-intervention, and this was maintained across a 3-year follow-up period for children in both arms of their study (community vs. clinic-delivered). Another possible reason is that there are cross-cultural differences in CU traits that contributed to the different findings (e.g. Fung et al., 2009). It is thus necessary for future research to further investigate stability of CU traits in community samples from Asian countries.

The prediction that there would be bidirectional link between negative parenting and CU traits was partially supported. Psychological aggression uniquely predicted long-term changes in CU traits. This provided support for previous evidence that psychological aggression may be particularly detrimental (Claussen & Crittenden, 1991; Crittenden et al., 1994). This finding was also consistent with findings by McDonald et al (2011), which is the only other known study that has investigated the direct association between CU traits and psychological aggression. It thus appears that negative parenting, specifically psychological aggression, may be particularly damaging in clinic-referred children from Singapore. The findings also indicate that intervention programmes, which target harsh verbal interaction between parent and child, and provide strategies for parents to respond to children firmly, may be central in reducing CU traits. On the other hand, CU traits did not predict changes in psychological aggression. Considering that this is the first study to investigate child-driven effects on psychological aggression, future studies would be needed to replicate this finding before any firm conclusion can be made.

Somewhat contrary to predictions, there was no bidirectional effect of CU traits and physical punishment. Parents in our study thus did not appear to react to CU traits by increasing the use of physical punishment. These findings were different from those by Hawes et al (2011), who reported that CU traits predict changes in
punishment. Findings also did not provide support for the model of punishment insensitivity (Dadds & Salmon, 2003). Dadds and Salmon speculated that in children with high CU traits, their punishment insensitivity and poor responsivity to parental discipline may elicit harsher discipline from parents to manage the child’s behaviours. This was not found in our study. Physical punishment was also not found to predict changes in CU traits, unlike previous studies (e.g., Barker et al., 2011; Childs et al., 2014; Frick et al., 2003b; Loney et al., 2007, Waller et al., 2012). It is unclear if cultural differences in CU traits or parenting between our study and past studies may have contributed to these findings. For instance, previous studies have reported weaker association between corporal punishment and child outcomes in countries where corporal punishment is more widely accepted (e.g., Lansford et al., 2005). It is thus plausible that as corporal punishment is quite widely accepted and adopted in Singapore, this may have contributed to CU traits being a weak predictor of physical punishment. Further research is needed to determine if this is indeed so. Taken together, the findings thus highlight the importance of distinguishing between different dimensions of negative parenting, and further examining the role of psychological aggression and physical punishment separately in future studies, especially in Asian culture.

Several limitations should be considered when interpreting our findings. First, the relatively small sample size may have reduced the power to find significant relationships, and this is an important consideration when interpreting the non-significant findings. Second, participants in our clinic-referred sample had all received treatment, and treatment effects may have potentially influenced our findings. It should be noted, however, that it would not be ethical to withhold treatment from children diagnosed with clinically severe conduct problems, and that
many such children would receive some form of treatment across such a lengthy period in any case. Although an untreated sample would have avoided this potential confound, it would have limited our potential to collect long-term prospective data from a sample characterised by very high levels of conduct problems and associated risk factors. Third, only two dimensions of harsh parenting were included in our study. Other measures of negative parenting, e.g., poor monitoring, and positive parenting, e.g., parental warmth, parental involvement, may be closely linked with CU traits. Future studies would thus benefit from examining long-term associations between CU traits and these different dimensions of parenting. Fourth, our study was limited to the use of questionnaire responses from parent and child, which are subject to reporting biases. The inclusion of observational data, and data from third parties, e.g., teachers or peers, would further improve the design. Fifth, our study was limited by the modest alpha coefficients obtained for CU traits at both Time 1 and Time 2, which may affect the reliability and validity of the measure. Lastly, the time interval between Time 1 and Time 2 ranged between four to seven years for different children. This is a wide time range and a limitation of the study considering that there may be significant development and changes in the children in a few years.

In conclusion, this study is the first to consider the long-term stability of CU traits, and the bi-directional associations between CU traits and negative parenting in an Asian sample. Contrary to hypotheses, we did not find moderate stability of CU traits, nor bidirectional effect between CU traits and negative parenting. A key finding was that parental psychological aggression had damaging effects for clinic-referred children in Singapore and predicted long-term changes in CU traits. Our study is significant as it adds to the limited literature on CU traits in Asian countries. Our findings raise specific issues for future cross-cultural research, and provide specific
suggestions for the provisions of intervention for conduct problem that takes into consideration CU traits.
CHAPTER 5
GENERAL DISCUSSION
In recent years, the subgrouping of children with conduct problems based on high versus low levels of CU traits has garnered much support. There is currently considerable evidence that children with high levels of CU traits are associated with more severe and chronic trajectory of antisocial and aggressive behaviour (see Frick et al., 2014). Distinct correlates and etiologies are associated with CU traits. While the majority of research has implicated causal mechanisms that were child-driven (e.g. temperament, cognitive deficits), a growing body of research has investigated the association between parenting and CU traits. Existing research on CU traits and parenting, however, suffers from a number of limitations, namely a lack of research on CU traits and its association with parenting in Asian countries, and a limited understanding on the association based on specific dimensions of parenting and conduct problems. This thesis thus aimed to address these limitations. The overall aim of the current research was to examine CU traits in Asian culture, especially its association with specific dimensions of negative parenting. Three studies were conducted to achieve this aim.

**Key Findings**

Study 1 was a systematic review that examined evidence of CU traits in Asian cultures. 15 Asian samples were identified and the strongest support was for the association between CU traits and a particularly severe presentation and trajectory of conduct problems. Relatively consistent findings were also found for a positive association between CU traits and narcissism. Additionally, there was some evidence that social adversity, poor attachment, and parenting practices were associated with CU traits. Study 2 and Study 3 investigated the association between CU traits, negative parenting and conduct problems in clinic-referred children from Singapore.
Study 2 was a cross-sectional study involving 282 children. In this study, parental physical aggression was found to be uniquely associated with children’s proactive aggression, whereas parental psychological aggression was uniquely associated with both proactive and reactive aggression. Moreover, physically aggressive parenting was found to be more strongly associated with children’s proactive aggression among children with low levels of CU traits, than those with high CU traits. In Study 3, CU traits showed low stability over a six-year period in a sample of 60 children, that was a subsample of the 282 children in Study 2. Additionally, changes in CU traits were uniquely predicted by parental psychological aggression. There was no child-driven effect of CU traits predicting changes in psychological aggression. There was also no bidirectional association between CU traits and physical punishment.

Findings from these three studies contribute to the existing literature on CU traits. First, findings from Study 2 and 3 provided strong evidence that psychological aggression was a particularly detrimental form of negative parenting in Singapore that warrant further research. Specifically, psychological aggression was uniquely associated with both reactive and proactive aggression, and psychological aggression predicted long-term change in CU traits. This is consistent with previous findings on psychological aggression (e.g., Crittenden et al., 1994). Most research on specific dimensions of negative parenting has, however, been conducted on corporal punishment and inconsistent discipline (e.g., Hawes et al., 2011). Our findings thus highlight the important role of parental psychological aggression in the development of CU traits and child aggression, and indicate that it is important for future research to examine the effects of parental psychological aggression in different samples.

Second, a major finding from Study 2 was the stronger association between parental physical aggression and child proactive aggression among Singaporean
children with low levels of CU traits, than those with high levels of CU traits. This is the first Asian study to investigate this association, and provides initial evidence that there was a similar moderator effect in Asian culture, as that reported in a number of Western studies (e.g., Oxford et al., 2003; Hipwell et al., 2007; Wootton et al., 1997). Our result is significant as it shows that despite the cultural norms and acceptability of physical punishment in Singapore, CU traits moderated the association between parental physical aggression and child proactive aggression.

Lastly, our empirical studies provided some evidence on the characteristics of CU traits in an Asian sample. Consistent with findings from Western countries, CU traits was positively associated with diagnostic severity of ODD/CD symptoms, However, CU traits were, surprisingly, not associated with proactive aggression, reactive aggression, or externalising behaviours. CU traits also showed low temporal stability and were not associated with changes in parental psychological aggression or parental physical aggression. This raises the possibility of cultural differences in presentation of antisocial behaviour among Asian children with CU traits. There may be a different direct association between CU traits and physical punishment in different cultures, dependent on cultural norms towards corporal punishment. Future research will be needed to further investigate this.

**Limitations**

Several limitations should be considered when interpreting these findings. First, only parental psychological aggression and physical aggression were examined in our research. However, other dimensions of parenting may be more important in explaining CU traits in a Singaporean sample. For instance, psychological control has been perceived as a sign of involvement and concern, and reported as being more
socially accepted in Chinese culture (Chao, 1994). Critical comparison and shaming were further identified to be important in the Chinese culture (Wu et al., 2002). Our research also did not investigate aspects of positive parenting (e.g., parental warmth), which has been found to be more closely related to CU traits than negative parenting in some studies (e.g., Muratori et al., 2016).

Second, our studies were limited by the modest alpha coefficients obtained for CU traits, which may affect the reliability and validity of our CU traits measure. Nonetheless, low alpha coefficients have similarly been reported for CU traits in other studies (e.g., Edens et al., 2008; McDonald et al., 2011). The low alpha coefficients may be contributed by the small number of CU traits items in the APSD. As a result, we also calculated the mean inter-item correlation for our CU traits measure, which was consistently more than the .15 minimum level recommended (Clark & Watson, 1995).

Third, our empirical studies were limited to the use of questionnaire responses from parent and child, which lend it to reporting biases. Furthermore, we relied on child-report of negative parenting in our studies. Previous studies have often relied on parental reports of parenting (e.g., Barker et al., 2011; Hawes et al., 2011), with only a few studies relying solely on child reports (e.g., Vitacco et al. 2003; Yeh et al, 2011). This thus limits the ease with which our findings can be compared with those of other studies. Yet, there may be advantages to using child report of parenting, especially when we are examining negative parenting. Previous research in Chinese families has found that child reports of severe violence may be advantageous given that parents appear to often under-report such maltreatment (Chan, 2012). As such, our collection of child-reports on the measure can also be considered a strength of the current study. Additionally, different informants reported on conduct problems and CU traits in the
two empirical studies. For instance, data on child reactive and proactive aggression was obtained from child self-report in Chapter 3, while child conduct problems were reported by parents in Chapter 4. This may contribute to differences in findings between the two studies as caregivers and children may have different views on child conduct problems. Future research would benefit from the use of multi-informant data, as well as the use of observational and multi-method approaches (e.g., Pasalich et al., 2011).

Lastly, Study 2 is limited by the use of cross-sectional data that precludes interpretations regarding causality. Study 3, on the other hand, is limited by its relatively small sample size that may have reduced the power to find significant relationships. Furthermore, participants in our clinic-referred sample had all received treatment, and treatment effects may have potentially influenced our findings for study 3. It should be noted, however, that it would not be ethical to withhold treatment from children diagnosed with clinically severe externalizing problems, and that many such children would receive some form of treatment across such a lengthy period in any case.

**Implications and Future Directions**

Notwithstanding the above limitations, our research provides support for the utility of assessing CU traits in Asian samples, especially in identifying a subgroup of children who are at greater risk of engaging in more severe and chronic levels of antisocial behaviour. There are also a few implications and suggestions for future research. First, results from Study 1 showed that Asian studies on CU traits have been largely limited to cross-sectional studies based on questionnaires. Studies were also often hampered by poor study design, e.g., not controlling for possible confounding
variables, poor internal consistency of measures, and shared method variance. More Asian research with better study designs is thus warranted. For instance, more longitudinal studies are needed to better determine if CU traits predict later antisocial behaviours. Future research would also benefit from the use of multi-informant measures of parenting, as well as the use of observational and multi-method approaches to measure parenting (e.g., Pasalich et al., 2011). Considering the unexpected results from Study 3, there is also a need for future studies to further investigate the temporal stability of CU traits in Asian samples. It will be useful for future studies to include community samples, and also assess stability over shorter periods of time (e.g., 1-3 years) to investigate if differences exist when compared to our findings.

Second, findings from our studies suggest that the six-item CU traits scale from the APSD may not be the best measure of CU traits in Chinese samples. Beyond Study 2 and Study 3, low alphas were consistently reported in existing Asian/Chinese studies (e.g. Fung et al., 2009; Li et al, 2017; Wang et al., 2015). As such, Li et al (2017) and Wang et al (2015) recommended the removal of the items ‘you hide your feelings or emotions from others’, and ‘you keep the same friends’. However, this leaves only four items for a CU traits measure that comprises a number of sub-dimensions (lack of remorse, lack of empathy, lack of concern about performance, and shallow affect). It will thus be worthwhile for future research to investigate the possibility of improving the APSD to make it more suited for the Asian/Chinese culture. This could be similar to what Eremsoy et al (2011) did to improve performance of the CU traits measure in a Turkish sample. They retranslated two items that did not perform well, including retranslating the item of hiding emotions, to emphasize callousness and unemotionality. Otherwise, future research could further
investigate if other measurement tools of CU traits (e.g. ICU) are more suitable for use in Asian/Chinese cultures.

Third, future research could build on findings from our studies. In particular, there were a few findings that needed to be replicated before any conclusion can be drawn. For instance, future research could further investigate, and confirm if there was no child-effect of CU traits on negative parenting in Asian/Chinese samples. Future research could also investigate the bidirectional association between CU traits and specific dimensions of positive parenting in Asian/Chinese samples, e.g. parental warmth, parent-child communication. To date, only one Chinese study has examined the direct association between positive parenting and parental involvement (Law, 2012). However, studies have reported significant bidirectional links between CU traits and parental involvement (Hawes et al., 2011), positive parenting (positive reinforcement and parental involvement)(Muratori et al., 2016), and parental warmth (Waller et al., 2014). It will be worthwhile to determine if there is a similar reciprocal association in an Asian/Chinese sample. Lastly, there were some findings that negative parenting was associated with CU traits only under specific circumstances, such as in the presence of parental depression (Childs et al., 2014) and family chaos (Kahn et al., 2016). Research can thus be conducted to determine if these variables may moderate the association between negative parenting and CU traits in Asian cultures.

In terms of practical implications, findings from the studies highlighted the need to increase awareness on the detrimental effects of parental psychological aggression. Psychological aggression is less researched on, and hence less understood in comparison to physical punishment. It is thus important for the research evidence on psychological aggression to be shared with parents. Specifically for parents with
children who display conduct problems, findings suggest that it is important to assess and target psychological aggression in family-focused interventions. Assessment can be done through interviews and questionnaires such as the Conflict Tactics Scale (Straus, 1979), and intervention can involve helping parents understand the negative effects of psychological aggression using research evidence, and teaching them to replace psychological aggression with calm, non-coercive discipline strategies. Possible strategies include time-out, removal of privileges and planned ignoring of undesirable behaviours. For instance, time-out removes the child from the situation and prevents any escalation of conflict between parent and child. Furthermore, time-out provides an opportunity and space for parents to regulate their emotions during this brief period of separation. The use of rewards more frequently can also contribute to improvements in child behaviour, and reduce the use of parental psychological aggression to manage misbehaviour. Better emotional regulation strategies can also be taught to parents to help them better manage their emotions, and thus reduce their use of psychological aggression. These are strategies available in existing Parent Management Training (PMT) (e.g., Dadds & Hawes, 2006).

Additionally, findings from our studies highlight the relevance of assessing CU traits in Singaporean children. This is considering findings that physically aggressive parenting was found to be more strongly associated with children’s proactive aggression among children with low levels of CU traits, than those with high CU traits. An assessment of CU traits will allow clinicians to target physical aggressive parenting and use standard PMT for children with low levels of CU traits, while considering other interventions that may be more effective for children with high CU traits. For instance, Dadds et al (2012) examined the effects of including an emotional-recognition training to standard PMT, and found that the combined
intervention significantly decreased conduct problems and improved affective empathy for a group of children with high CU traits, as compared to the regular PMT.

**Conclusions**

Three studies were conducted to advance our knowledge of CU traits, and their associations with negative parenting and conduct problems in an Asian/Chinese sample. Existing evidence support the association between CU traits and more severe antisocial behaviour in the Asian culture. Findings from a Singaporean sample however reveal poor temporal stability of CU traits. There was a stronger association between physically aggressive parenting, and child’s proactive aggression in children with low CU traits, compared to children with high CU traits. Lastly, changes in CU traits were uniquely predicted by parental psychological aggression. The findings are significant in advancing our knowledge of CU traits in countries beyond those that have been the predominant focus of research to date. The findings provide directions for future cross-cultural research, and help inform clinicians about heterogeneity between children with high versus low CU traits, so that intervention can be developed and refined for children with high CU traits.
REFERENCES
References marked with an asterisk (*) are studies that were included in the review in Study 1.


Dougherty DM, Mathias CW, Marsh DM. GoStop Impulsivity Paradigm (Version 1.0) [Manual]. *Neuro- behavioral Research Laboratory and Clinic*, University of Texas Health Science Center at Houston, Houston, Texas. 2003.


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Psychiatry, 52, 1308–1315.


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*Somech, L. Y., & Elizur, Y. (2009). Adherence to honor code mediates the*


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APPENDICES

Appendix A. Ethics Approval
Appendix B. Participant Consent Forms
Appendix C. Questionnaires
Appendix A: Ethics Approval and Amendment

- Main Ethics Application Form
- Ethics Amendment Application Note
- Ethics Approval
- Ethics Amendment Approval
Study Reference Number: 2016/00607
Version Number: 3
Specific descriptions for each section can be found here
Please select the appropriate form for submission to the DSRB. Please refer to the explanatory notes below if you need more information.
- DSRB Application Form 1 - Non Exempt Category
- DSRB Application Form 2 - Exempt Category

Research activities in which the only involvement of human subjects will be in one or more of the following categories may be able to qualify for the Exempt category.
Please click on the DSRB Application Form 2 - Exempt Category option above to view the categories.

DSRB Application Form 1 - Non Exempt Category
Principal Investigators should use Application Form 1 if their research activity does not qualify under the Exempt Category. Application Form 1 should be used for submissions for the Full Board Review and Expedited Review.

DSRB Application Form 2 - Exempt Category
Research activities in which the only involvement of human subjects will be in one or more of the following categories may be able to qualify for the Exempt category.
IMPORTANT: The criteria for the Exempt category do not apply when the research activity:
(i) involves prisoners
(ii) involves children, when the research involves survey or interview procedures or observations of public behavior, except when the investigator(s) do not participate in the activities being observed
(iii) is a US FDA-regulated research activity.
**Ethics Main Application Form (Section A - Study Title & Study Administrators)**

**A1 Please enter the full study title.**

Long-term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

**A2 (Optional) Please assign Study Administrators below.**

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<th>No.</th>
<th>Name</th>
<th>Institution</th>
<th>Department</th>
<th>Role</th>
<th>Email</th>
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<tr>
<td>1</td>
<td>Tan Yi Ren</td>
<td>Institute of Mental Health</td>
<td>Child &amp; Adolescent Psychiatry</td>
<td>Study Administrator</td>
<td><a href="mailto:yl_ren_tan@imh.com.sg">yl_ren_tan@imh.com.sg</a></td>
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</table>
**B1 Study Sites & Study Team Members**

All investigators who have a responsibility for the consent process and/or direct data collection for this study should be listed below.

Study Team Members with registered user account with us will be notified of their participation in this study when the Application is submitted.

For a Multi-centre study, please appoint a Site PI for each site (Mandatory).

The Principal Investigator will be the Site PI for their own Institution, and will also be the primary contact person for the DSRB.

(i) **Overall Principal Investigator** (Main contact for DSRB): Daniel Fung

(ii) **Study Sites under the oversight of NHG DSRB** Click here for help

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<th>Study Role</th>
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<td>A/Prof Daniel Fung</td>
<td>PI</td>
<td>Institute of Mental Health</td>
<td>Child &amp; Adolescent Psychiatry</td>
<td>Completed</td>
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<tr>
<td>2</td>
<td>Institute of Mental Health</td>
<td>Ms Sng Khai Imm</td>
<td>Co-Investigator</td>
<td>University of Sydney</td>
<td>School of Psychology</td>
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<td>3</td>
<td>Institute of Mental Health</td>
<td>A/Prof David Hawes</td>
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<td>Dr Choon Guan Lim</td>
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<td>Psychological Studies</td>
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<td>University of Pennsylvania</td>
<td>Criminology, Psychiatry &amp; Psychology</td>
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<td>Collaborator</td>
<td>McGill University</td>
<td>Psychiatry, Neurology &amp; Neurosurgery</td>
<td>-</td>
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With effect from 1 January 2015, all study team members involved in the design, conduct or reporting of the research are required to complete and endorse on an annual basis, a Conflict of Interest Declaration Form. This declaration includes any conflicts of interest of their immediate family members (includes parents, siblings, spouse and each dependent child).

The annual Conflict of Interest declaration cycle will be from 1 January to 31 January of each year. Any Conflict of Interest declaration form submitted till 15 January of each year for the year of interest will be reviewed in the DSDB FCOI secretariat (Email: DSRB_FCOI@nhg.com.sg) or must be attached with this DSDB Application Form under “Attachments” tab (see first page of this document), Section/Question to select as “Others”, to be submitted to DSDB for review, if not previously submitted during the annual declaration cycle.

The Conflict of Interest Declaration Form can be downloaded from https://www.research.nhg.com.sg/wps/wcm/connect/romp/nhgromp/hspp/financial+conflict+of+interest/fcoi+policy

An updated Conflict of Interest Declaration Form must be submitted to the DSDB via a study amendment as soon as possible but no later than 30 days if any of the circumstances relevant described herein change during the conduct of the research.

Mr Tan Yi Ren (Collaborator)
☐ Yes
☐ No

A/Prof Daniel Fung (Principal Investigator)
☐ Yes
☐ No

Dr Choon Guan Lim (Collaborator)
☐ Yes
☐ No

Dr Yoon Phaik Ooi (Collaborator)
☐ Yes
☐ No

Please be reminded to attach the completed Conflict of Interest Declaration Form for all study team members involved in the design, conduct or reporting of the research. They may include study coordinators, biostatisticians etc. who may not be listed in Section B and C of the DSDB Application Form.
D1 Please select one category that best describes your research activities.

- Clinical Trials (which includes Drug, Device and Surgical-Procedural Trials)
- Questionnaire/ Survey/ Interviews
- Medical Records Review
- Clinical Research

Note: Clinical Trial Certificate from Health Sciences Authority might be required if you are testing the safety and efficacy of the medicinal product. You should check with HSA if you are unsure.

D2 Is this a US FDA IND/IDE study or data is intended to be reported to FDA in support of a IND/IDE application?

- Yes
- No

Note: US FDA-regulated (IND) research activities cannot qualify for Exemption from DSRB Review and Waiver of Informed Consent. The application must be submitted using the DSRB Application Form 1 - Non Exempt Category.

D3 Is this study subjected to any of the following regulations:

- Yes
- No

- Others
(iii) External Study Sites under the supervision of the 'Overall Principal Investigator' (eg. Nursing Home, Community Hospitals, Community Centres etc).

B2 Research Specialty

Please select the Primary Specialty, and then choose the relevant Sub specialty that has been matched according to the Primary Specialty selected. If the Primary Specialty and/or Sub specialty cannot be found from the list, please choose 'Others' and specify.

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Please indicate/add Secondary Specialties.

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B3 Which Domain Specific Review Board (DSRB) is this application being submitted to? DSRB Domain A

B4 Has the application been previously rejected by any IRB? (Including NHG-DSRB)
- ☐ No
- ☑ Yes
E1 Who will be responsible for the payment and compensation of injury or illness arising from participation of research participants in the study?*

- National Clinical Trial (CT) Insurance Policy (Contact your institution research office for more information)
- Sponsor
- Others

E2 Please give information regarding the study’s Funding source or Sponsor information.

- No funding is required for this study to be carried out
- Pharmaceutical / Industry Sponsored
- Grant

i. Name of Grant Agency and Grant Name Others
   Please specify: Postgraduate Research Support Scheme and Postgraduate Research Grants

ii. Grant amount applied for 3000

iii. Date of Grant application deadline 01-Aug-2016

iv. Has the Grant application been approved?

- Yes. Grant application successful.
- No. Grant application is pending approval.

   Is the study’s initiation dependent on Grant approval?

- No. The study can be started without the Grant.
- Yes. The study is dependent on the Grant to start.

E3 Will the funding cover all subject study-related drugs, devices, procedures, tests and visits? * Click here for help

- Yes
- No
- Not Applicable (No subject study-related costs)
Aims

Methodology

Importance of proposed research to science or medicine

Potential benefits & risks

**F1 What are the Specific Aims of this study?**

The overarching aim of this study is to investigate the long-term outcomes of SASSI participants, and gain deeper insight into the process of change. The specific aims and associated hypothesis are: 1. To assess the effectiveness of treatment in reducing conduct disorder and ADHD over the long term. 2. To identify child and family factors that predict and moderate long term outcome for antisocial behavior. This includes child characteristics such as callous-unemotional traits, which refers to a fearless temperament that is characterised by lack of guilt, lack of remorse and shallow affect, as well as family characteristics such as parenting and inter-parental conflict. 3. To uncover mechanisms of action underlying any long term change in antisocial behaviour. This includes considering the role of child and family characteristics as mediators and moderators of change, and understanding the process of change that contribute to long term change in antisocial behaviour.

**F2 What is the Hypothesis of this study? For qualitative studies, please provide the research question instead.**

(1) The group that received social skills training and/or omega-3 supplement will show the greatest improvement in externalising behaviour as compared to placebo group. (2) Children with higher callous-unemotional traits have poorer treatment outcomes across treatment groups. (3) Harsh parenting mediate reduction in externalising behaviour.

**F3 Please state concisely the importance of the research described in this application by relating the specific aims to the long term objectives.**

Treatment and remediation of conduct disorder is a key priority for mental health research, as it is known to be a common forerunner to crime and mental health problems in adulthood. As such, it is not only important that research investigates the effectiveness of various treatments, but that the evaluation of such treatments extends to long term follow up data on the adjustment of participants in subsequent years. Despite its importance, progress in developing cost-effective treatment programs for children and adolescents with conduct disorder has been limited, and the long-term outcomes of treatment-referred children and adolescents with externalizing problems have been investigated only rarely. Furthermore, such studies have been limited largely to the United States and the United Kingdom. By examining parent perceptions of the process of change, the study has the potential to further inform approaches to the design and delivery of family-based interventions in order to maximise long-term gains. By examining moderators of treatment success, the study can provide valuable data on subgroups of children who may preferentially benefit from treatment, as was as those who may be most likely to require from additional support.

**F4 Please describe the background to the current study proposal. Critically evaluate the existing knowledge and specifically identify the gaps that the proposed study is intended to fill.**

Serious adult crime and violence is a social problem despite decades of intervention and prevention work. One of the reasons for the world-wide failure to prevent this problem stems from (a) a failure to tackle the biological component of the crime/violence equation in treatment programs, and (b) the failure to tackle this adult condition in its formative childhood origins. Investing modest resources in early biosocial prevention programs could yield enormous long-term financial dividends in terms of the saved legal, medical, social, and psychological costs resulting from adult crime. Research has shown that parent training is an effective treatment for conduct problems, yet questions were raised about the magnitude, scope, and durability of impact (Kazdin, 1997). Webster-Stratton, Rinaldi and Reid (2010) studied teenagers who were diagnosed with conduct problems 8-12 years after they received the Incredible Years Parent Program (consisting of 12 weekly sessions). These teenagers were found to be typically adjusted with minimal behavioural and emotional problems. Positive outcomes post-treatment were mostly maintained years later. It would thus be worthwhile to study if similar long-term treatment effects are present for treatment provided in the SASSI study. There is also initial evidence for effects of omega-3 supplementation on conduct disorder and ADHD (e.g., Tomura et al., 2005). However, not all studies have shown an effect of omega-3 supplementation in reducing antisocial
behavior (e.g., Hirayama et al., 2004). Similarly for social problem-solving skills training, some evidence has been found in studies of children who are severely aggressive and disruptive in clinical settings (e.g., Kazdin et al., 1992). However, failures to document adequate success for group-based skills training have been noted (e.g., Ooi, 2005). There is thus mixed results for the different treatment of conduct problems. Of note, there are relatively few studies conducted in the Asian culture. There is thus scope to study the effectiveness of these treatment further. This includes both quantitative data over the long term on treatment effectiveness, and qualitative data that can provide deeper insight into the process of change. For instance, Holtrop et al. (2014) recently conducted a qualitative study to obtain a better understanding of how parents’ experiences in an evidence-based parent training intervention led to change in their parenting practices. The study involved in-depth interviews with parents across a wide range of time points following their participation in parent training intervention (between 1 and 53 months following completion of intervention). The Supplements and Social Skills Intervention (SASSI) study was started in 2008 to assess whether a nutritional intervention (Omega-3 supplement), when combined with a more traditional treatment approach (social skills) to conduct problems and ADHD, was more effective than either approach alone in treating these conditions in children and adolescents. The inclusion criteria were: (1) children between ages 7 and 16 years; (2) fulfill all criteria for a DSM-IV diagnosis of ADHD, conduct disorder, or oppositional defiant disorder; (3) willingness to participate in a randomized, double-blind controlled trial, complete with written, informed parental consent and assent from children; (4) IQ of 70 or more. Children were randomly allocated to one of four treatment groups using: (1) omega-3 and standard treatment, (2) social skills, omega-3 placebo and standard treatment, (3) omega-3, social skills and standard treatment, and (4) standard treatment + omega-3 placebo. Instruments were administered at four time-points: 0 months (baseline); week 0, 3 months (mid-treatment; week 12), 6 months (end of treatment; week 24), 12 months (6 months post-treatment; week 48). Preliminary findings from the SASSI study have been presented at symposia including the 2nd Asian Congress on ADHD in 2014. It was found that children in the social skills training group showed a continuous improvement in externalizing behavior, whereas the group who did not receive social skills training showed improvement initially but showed no sustained effect at follow-up. Further, children who received omega-3 only, social skills only, or both omega-3 and social skills training showed a greater trend toward improvement on parent-rated aggression at post-treatment (6-month). The current study is proposed as a follow-up study to investigate the long term outcomes of SASSI participants and we would be looking at whether gains were maintained/lost/identify emergent improvements after cessation of study. We would also be studying if other factors, e.g. callous-unemotional traits, predicted long-term treatment outcomes.

F5 Please provide a list of relevant references.


F6 Please submit a copy of at least two relevant papers.

LT outcomes for ADHD and CP_Reference 1.pdf

LT outcomes for ADHD and CP_Reference 2.pdf

F7 Discuss in detail the experimental design and procedures to be used to accomplish the specific aims of the study. (If this study involves a retrospective medical record review, please specify the
period of data collection and the database to be accessed. (Note: NEHR cannot be accessed for research)* Note: W.e.f. 1 July 2014, all research studies submitted from National University Hospital (NUH), involving the use of radioactive materials and/or radiation-emitting equipment will need to obtain approval from the NUH Radiation Safety Committee (RSC) prior to the commencement of the study. For more information and to receive a copy of the 'Guidelines to undertake Research which involves the use of Ionizing and/or Non-Ionizing Radiation', please contact the NUH Radiation Safety Officer (michael_long@nuhs.edu.sg) or the NUHS Research Office (clinical_research@nuhs.edu.sg).

There are two parts to the study. Part 1 will involve 154 participants from the SASSI participant pool who agreed to be contacted for future studies. Parents will be reached by phone to provide brief information about this study, and to check if they are willing to participate in this follow-up study. If parents are agreeable, both the child and their parent will be invited to the Child Guidance Clinic. Detailed explanation will be given as well as consent/assent will be obtained from both the children and their parents. This includes obtaining consent/assent to use data from the original study in this follow-up study. They will then be administered a set of questionnaires. The child will complete the YSR/ASR, RPO, AQ, APSD and CTS. The parent will complete the CBCL/ABCL, CPRS, APSD and CTS. These questionnaires are a subset of those previously administered as part of the SASSI study. The only difference will be some new questions regarding significant changes or events in the family and any service the child has received since the original SASSI study, and if the child had any contact with the police. A similar question on significant events was included in the initial SASSI data collection. Instead of asking about the past 12 months before the SASSI study, we have adapted it to include significant events after the SASSI study was completed, and asked for when that happened. Both positive and negative events would be included. The data would be useful to understand if significant life events had an effect on long-term outcomes. A brief interview will be conducted to obtain information about these. This process is estimated to take 1-1.5hr. If participants are unable to attend an appointment at the Clinic, alternatives will be explored with the participants that best suit them, such as conducting the appointment at an alternative public venue that is more convenient for participants yet conducive for data collection. The main outcome measures are aggression and delinquency (CBCL/YSR/ASR). The secondary outcome measure is types of aggression, namely reactive, proactive, verbal, physical, hostility (AQ/RPO). For part 2 of the study, parents who rated their children as having high callous-unemotional traits on the APSD at baseline in SASSI study (as determined by a cut-off score of 7), and who report in the current study that their children no longer meet criteria for conduct problems (based on the CBCL/ABCL, below cut-off on aggression and rule-breaking behaviour) will be contacted over the phone and invited to participate in a face-to-face interview that is estimated to last between 1.5-3hrs. Questions will be asked to understand their parenting experience over time (before treatment, during treatment and after treatment).

F8 Please provide details on (i) sample size and power calculation and (ii) the means by which data will be analyzed and interpreted. If this is a pilot study/qualitative study and no sample size calculation is performed, please provide a rationale on how the recruitment target is determined.*

All 154 participants who agreed to be contacted for future studies will be contacted for the quantitative study (part 1). Analyses will be conducted using combinations of ANOVA, MANOVA, covariance analysis, chi-square, multiple regression. Data from the original study will be used in these analyses. The numbers of potential participants in the four different treatment groups are omega-3 and no social skills training (n = 32), omega-3 and social skills training (n = 47), placebo and social skills training (n = 32), and placebo and no social skills training (n = 43). We have included flexibility in how data is collected so as to increase recruitment rate (face-to-face interview at venue that is suited to participants). We hope to recruit as many of the n = 154 participants in order to maximise power to conduct statistical tests to study if gains were maintained/lost, and to identify emergent improvements after cessation of study for the different treatment groups. In addition, this follow-up study will also allow us to investigate the factors that are predictors of long-term treatment outcomes. For instance, it has been found in a systematic review by Hawes, Price and Dadds (2014) that callous/unemotional (CU) traits was associated with greater risk for poor treatment outcomes. CU trait is an area less studied in the Asian culture and it will be worthwhile to investigate if it similarly predicts long-term treatment outcomes in the SASSI sample. The examination of this in linear regression will not rely on specific group sizes across various conditions, as it is of interest to examine whether such a predictor accounts for long term outcomes regardless of condition. We are thus confident that there is value in collecting additional data on the long-term outcomes of SASSI participants. For part 2, the qualitative study will involve 15 parents through purposive sampling of those who reportedly no longer meet criteria for conduct problems. A semi-
structured interview will be conducted. Analysis will be conducted using narrative inquiry. This will involve transcribing the interview, with random checks by a co-researcher. The transcript will then be rewritten into a first person narrative. The narrative will be member checked with participants to ensure they agree with the narrative or modifications are made as necessary. Coding will be done for the narratives, with themes and subthemes cross-coded with co-researcher. The sample size proposed is consistent with other studies using the same method to explore recovery from mental illness (e.g. Kirkpatrick amp; Byrne, 2009). Hawes, D. J., Price, M. J., amp; Dadds, M. R. (2014). Callous-unemotional traits and the treatment of conduct problems in childhood and adolescence: A comprehensive review. Clinical child and family psychology review, 17(3), 246-267. Kirkpatrick, H., and C. Byrne. “A narrative inquiry: Moving on from homelessness for individuals with a major mental illness.” Journal of Psychiatric and mental health nursing 16.1 (2009): 68-75.

For part 1 of the study, parents will be contacted via phone to first provide them an overview of the study, and requested to make one visit to complete the questionnaires and brief interview, together with the consent and assent forms. If parents are agreeable, both the children and their parents will be invited to an appointment where detailed explanation will be given as well as consent/assent will be obtained from both the children and their parents. This includes obtaining consent/assent to use data from the original study in this follow-up study. The face-to-face appointment will be conducted at a room in the Child Guidance Clinics. If this is not feasible, an alternative is to conduct the face-to-face appointment at a public venue, e.g. a community centre.

If so, safety protocols will be followed: (1) the assessment will be done at a public place, (2) the researcher will have a mobile phone with her, and (3) the researcher will let other study team members know where and when she is meeting the participant/parent. The child will complete the YSR/ASR, RPI, AQ, APSD and CTS. The parent will complete the CBCL/ABCL, Cprs, APSD and CTS. These questionnaires are a subset of those previously administered as part of the SASSI study. The only difference will be some new questions regarding significant changes or events in the family and any service the child has received since the original SASSI study, and if the child had any contact with the police. A brief interview will be conducted to obtain information about these. This process is estimated to take 1-1.5hr. For part 2 of the study, a small group of participants who meet criteria for the qualitative study will be contacted for an individual face-to-face interview that will last approximately 1.5-3hr. This will be conducted at a room in the Child Guidance Clinics, or at a public venue that is conducive for this purpose. Questions will be asked to understand their parenting experience over time (before treatment, during treatment and after treatment).

F10 Please list all activities that are performed for routine diagnostic or standard medical treatment as part of the research participant’s standard care. Research-related activities stated in F9 should be excluded from this section.

Some of the participants may be still under the clinic’s or hospital’s care. Standard medical treatment can be still carried out as part of the subject’s standard care.

F11 Please describe the subject’s visits (frequency and procedures involved). Please attach study schedule if available.

For part 1 of the study, informed consent will be obtained and questionnaires will be administered in one single visit. The process is estimated to take 1-1.5hr. For part 2 of the study, a small group of participants who meet criteria for the qualitative study will be contacted for an individual face-to-face interview that will last approximately 1.5-3hr.

F12 Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims.

It may be difficult to contact SASSI participants considering a few years have passed since the start of the SASSI study. Attempts will be made to reach them at the different contact numbers they provided. Alternatives will also be explored if participants are unable to attend an appointment at IMH, such as appointment at alternative public sites that are more convenient for participants.

F13 What are the Potential Risks to research participants?

The risk is that parents/participants may become upset when completing the questionnaires or participating in the interviews. The researcher will stop the research study and ask the participants/parents if they would like to speak to the researcher about how they are feeling, or encourage them to contact their GP or clinician (if any). They will also be provided with a number to call if necessary: IMH Mental Health Helpline (24-
hour hotline: 6389 2222). The researcher will also ask for the participant/parent consent to follow up with a courtesy call in a few days' time to check that they are coping.

F14 What are the Potential Benefits (direct as well as indirect) to research participants?

Findings from the study may be useful to participants in terms of helping them understand factors that contribute to their children's behaviours, and also learning about how families were able to cope and help their children overcome their conduct problems.

F15 Preliminary Studies / Progress Reports. Please provide an account of the Principal Investigator's preliminary studies (if any) pertinent to this application.


F16 What is the estimated time needed to conduct this study?*

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<th>No. of Months</th>
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</table>

F17 Does this study have a Study Protocol? Note: For Clinical Trials, investigators are required to submit a Study Protocol for review.

- Yes
- No

F18 The PI is responsible for ensuring that all Study research participants give informed consent before enrolling into the study.

Please select all the applicable consent scenarios.

- Informed Consent will be taken for all study subjects.
- Waiver of Informed Consent is requested for all study subjects.
- A combination of both Informed Consent and Waiver of Consent is required for different study populations.
H1 How will potential research participants be identified?

□ Referral by attending healthcare professional
☑ Persons with dependent relationship with study team (e.g. doctor-patient, employee-employer, head-subordinate, student-teacher, departmental staff relationship)

Please describe how the study team will manage the dependent relationship to prevent coercion or undue influence.

The researchers could be clinicians of the potential participants. However, clinicians responsible for the clinical care of the participants will not be involved directly in recruiting and/or consenting the participants.

□ Databases
☑ Other methods of identifying potential subjects

Please elaborate on your method(s) of subject identification (e.g. Advertisement, word of mouth etc).

Potential subjects are the 154 participants from the SASSI participant pool who agreed to be contacted for future studies.

H2 Who will make the first contact with the research participant?* Click here for help

Co-investigator Sng Khal Imm

Participants who agreed to be contacted for future studies will be contacted via telephone to check their willingness to participate in this study.

☐ Yes
☐ No

H5 Will any other recruitment strategies be used? (E.g. Talks in public places, societies etc.)

☐ Yes
☐ No

H6 Please indicate the length of time of the participant’s direct involvement in the study. E.g. For clinical visits, examinations etc. (If applicable)

Part 1 of the study (informed consent, questionnaires) is estimated to take 1-1.5 hrs. Part 2 of the study (face-to-face interview) is estimated to take 1.5-3 hrs.
I1 Please state the target number of research participants to be recruited for each study site in Singapore. If the exact numbers are not available, please give an approximate number range in the Recruitment Target Minimum and Maximum columns.*

Please note that recruiting subjects beyond the Max. No. without DSRB’s approval would constitute a Non-Compliance. If you intend to recruit beyond the Max. No., please submit a study amendment to increase the recruitment target.

For the distribution of Males, Females and Children to be recruited into the study, please use the Recruitment Target Max. No. to provide an approximate distribution ratio.

(Go back to Section B1 to add additional study site)

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<th>Recruitment Target Max</th>
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I2 Is this study part of an international study?

☐ Yes
☐ No
Ethics Main Application Form (Section K - Research Participant Characteristics)

K1 Please list the inclusion criteria. Note: For global studies, please modify the criteria according to local regulations (e.g. persons below the age of 21 are considered minors in Singapore and would require parental consent prior to participation). Click here for help

All participants who participated in the SASSI study and agreed to be contacted for future studies. The numbers of potential participants in the four different treatment groups are omega-3 and no social skills training (n = 32), omega-3 and social skills training (n = 47), placebo and social skills training (n = 32), and placebo and no social skills training (n = 43).

K2 Please list the exclusion criteria. For clinical trials involving drugs/medicinal products/medical devices, please state clearly, if pregnant women will be excluded from the study. Click here for help

SASSI participants who did not give consent to be contacted for future studies.

K3 Please state the age group of the research participants

<table>
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<th>Lower Age limit</th>
<th>Lower Age option years</th>
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<th>Upper Age option years</th>
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</table>

K4 Are there any recruitment restrictions based on the gender of the research participants?

☐ Yes
☐ No

K5 Are there any recruitment restrictions based on the race of the research participants?

☐ Yes
☐ No
☐ Yes

Please select all the applicable categories.
- Pregnant Women, Foetuses and Neonates
- Children (persons who are less than 21 years of age)
- Prisoners
- Cognitively Impaired persons
- Others (E.g. mentally disabled persons, or economically or educationally disadvantaged persons.)

☐ No

K6 Does the study involve any of the following?

☐ Inpatients
☑ Outpatients
☐ Healthy volunteers
☐ Not applicable
☐ Others (E.g. parents, students, residents, house owners)

Parent(s) of child participants
M Research involving Children (Persons under the age of 21 years) - Please provide protocol specific information explaining how your proposed research project meets the following criteria.

M1 Describe if appropriate studies have been conducted on animals and adults first, and data is available to assess risks to children participating in the research.

Similar questionnaires were previously administered to these participants when they participated in the SASSI study.

M2 Please justify the need to involve children and if the research question can be answered through alternative means (e.g. involving adults only).

The overarching aim of this study is to assess the long term outcomes of children with conduct disorder and ADHD who participated in the SASSI study. To avoid the issue of shared method variance, data is not only collected from parents but also from children/adolescents.

M3 Describe how the relation of potential benefits to risks is at least as favourable as that presented by alternative approaches.

There are no known harmful effects associated with participation in this study but there is also no direct benefit to participants. Where significant difficulties are noted to be experienced by the children, they will be provided with a list of services they can contact for assistance.

M4 Describe any additional safeguards that will be provided to protect the rights, safety and welfare of these vulnerable participants.

Parents and children in the study may withdraw from the study at any time. They can also contact the following party should they have any questions regarding the study: Principal Investigator, Dr Daniel Fung, 10 Buangkok View, Singapore 539747, Tel: 6389 2851. NHG Domain-Specific Research Board Secretariat at 6471 3266.

M5 What are the provisions for obtaining the child’s assent and parental permission? (Check all that apply) * Click here for help

- Assent will be obtained from all children above 6 years old and Parental Permission will be obtained.
  - Please provide a separate Assent Form to document assent for children aged 6-12 years old.
  - Please provide provision for Signature of Child on Parental Consent Form for children age 13-20 years old.

  Please submit the appropriate document
  - LT outcomes for ADHD and CP_assent form (participant adol) V4_24Feb17.doc
  - LT outcomes for ADHD and CP_assent form (participant child) V3_24Feb17.docx
  - LT outcomes for ADHD and CP_assent form (participant adol) V4_24Feb17 (tracked changes).doc
  - LT outcomes for ADHD and CP_assent form (participant child) V3_24Feb17 (tracked changes).doc

- Assent will not be obtained from the children. Only Parental Permission will be obtained.
- Parental Permission will not be obtained. Only assent will be obtained.
- Neither the children’s Assent nor Parental Permission will be obtained.
P1 Describe when the consent process will take place with the potential research participant, including the time provided for him/her to consider his/her participation in the study. Click here for help*

Participants who agreed to be contacted for future studies will be contacted via telephone to check their willingness to participate in this study. They will then be invited for an appointment and be asked to complete the parental consent form, and adolescent/child assent form, or adult consent form before they complete the questionnaires and brief interview. Parents and children will be given sufficient time to contemplate and ask questions pertaining to the informed consent form and to decide if they want to participate in the research study.

P2 Where will consent be taken (e.g. room, ward, outpatient clinic etc)? How will privacy, freedom from intrusion and comfort be ensured? Click here for help*

This will be done in one of the rooms at the Child Guidance Clinics (at Health Promotion Board or Bangkok Green Medical Park). If this is not possible for participants, alternative venues will be explored with the participants that best suit them and this could include a room at a community centre near their home. The place will be more convenient for participants yet conducive for data collection while ensuring the privacy of our potential participants and their parents/legal guardian.

P3 Who will take consent from potential research participants (e.g. PI, Co-Investigators etc)? Click here for help*

Co-investigator Sng Khai Imm

P4 Besides the Informed Consent Form, will any other materials or documents be used to explain the study to potential Research Participants? (e.g. scripts, handouts, brochures, videos, logs, etc).

- No
- Yes

P5 Will research participants receive any monetary payments (including transportation allowances) or gifts for their participation in the study? Click here for help*

- No
- Yes

Please provide details of the gifts and payment (including the amount paid).

- $25 for completing the questionnaires and $25 for interview.

P6 Will consent be documented in the form of a written and signed Informed Consent Form?

- Yes, all Research Participants will be given a copy of the Informed Consent Form.

Please attach a copy of the Informed Consent Form.

- LT outcomes for ADHD and CP_informed consent (parent adult)_V4_24Feb17.doc
- LT outcomes for ADHD and CP_informed consent (parent child or adol)_V4_24Feb17.doc
- LT outcomes for ADHD and CP_assent form (participant adult)_V4_24Feb17.doc
- LT outcomes for ADHD and CP_informed consent (qualitative)_V3_1Jul16.doc
- LT outcomes for ADHD and CP_informed consent (parent adult)_V4_24Feb17 (tracked changes).doc
- LT outcomes for ADHD and CP_informed consent (parent child or adol)_V4_24Feb17 (tracked changes).doc
- LT outcomes for ADHD and CP_assent form (participant adult)_V4_24Feb17 (tracked changes).doc

- No, Consent will not be documented. (E.g, verbal consent).
P7 Consent Language

Will the study enrol non-English speaking research participants?

- No

Please explain why.

- Participants will need to understand basic English in order to complete questionnaires and/or interview.

- Yes

P8 Will the study be recruiting research participants under emergency situations, when prior consent of the research participant is not possible?

- Yes

- No

P9 Do you have any additional comments regarding the Informed Consent process?

- No

- Yes

Please elaborate:

Informed consent forms are prepared for both (i) parents, who will agree to provide information about their child in this study, and (ii) the child, who will agree to provide information about themselves in this study. Different versions of ICPs will be used depending on the child’s age. Another informed consent form will be signed for part 2 of the study.
In general, to protect the Research Participant’s confidentiality, research data should be coded, and the links between the Participant’s identifiers and the codes should be stored separately from the research data.

R1 Will coded / anonymous research data be sent to the pharmaceutical sponsor?

☐ No, the study team would store all research data within the institution

R1(i) Please state how the research data will be protected to ensure confidentiality and security.

☐ For hardcopy data, they will be stored in designated locked cabinet(s) or room(s) that are accessible to authorized study personnel only.

☐ For electronic data, they will be stored on in a secured computer that is password-protected. The databases will not contain subject identifiers and the data linking subject identifiers and the subject identification codes will be stored separately. When portable media (e.g. CD, USB drives etc.) are used to store the data, subject identifiers are stored separately.

ii. Describe who will have access to the research data. (Please state the personnel who will have access to the study data eg. PI, Co-investigator, study coordinator.)

| The PI and his research team |

iii. Will research data be released and shared with individuals or entities outside the institution?

☐ No

☐ Yes, please ensure that there is an agreement in place to protect data confidentiality

iv. Will the research data be used for future research after the study is completed?

☐ No, the research data will be destroyed after it has been stored for 6 years or minimum duration of retention period as specified by your institutional policy, whichever is longer.

☐ Yes, the research data will be used for future research. Please register a standing database with DSRB

☐ Yes, the study team would send research data to the study sponsor

R2 Will any part of the study procedures be recorded on audiotape, film/video, or other electronic medium (excluding non-identifiable images such as MRI/ X-Ray/ CT)?

☐ No

☐ Yes

i. Please describe the contents of the recording (e.g. audio-recording of interview/focus group discussion, images of facial features, etc.).

| They will be audio-recording of interviews during part 2 of the study. |

ii. What is the medium (audio tape / video etc) used for recording?

| Audio tape |

iii. Explain how the recorded information will be used in the study.

| They will be transcribed and findings reported using narrative inquiry |

iv. For how long and where will the recording medium be stored? Who will have access, and how will access be controlled and monitored?

| They will be stored in password protected stand alone PC of co-investigator and will be retained for 6 years after the study. They will be destroyed thereafter. The PI and his study team will have access to these tapes. |

v. How will the recording medium be disposed?

| The audio-recording will be erased 6 years after the study. |
Please ensure that the Curriculum Vitae is accurate and up to date.

If the PI or Study Team Member Curriculum Vitae does not appear on the list, they will need to update and upload it through their ROAM profile.

The DSRB will use the information contained here to assess the qualifications of the Principal Investigator and Study team members to carry out the Study as described in this Application.

<table>
<thead>
<tr>
<th>No.</th>
<th>Study Site</th>
<th>Name</th>
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<td>Ms Sng Khai Imm</td>
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</table>
Your DSRB Application is now complete and ready for submission.

Principal Investigator’s Declaration

I will not initiate this study until I have received approval notification from the DSRB and all applicable regulatory authorities.

I will not initiate any change in the study protocol without prior written approval from the DSRB, except when it is necessary to reduce or eliminate any immediate risks to the Research Participants. Thereafter, I will submit the proposed amendment to the DSRB and all applicable regulatory authorities for approval.

I will promptly report any unexpected or serious adverse events, unanticipated problems or incidents that may occur in the course of this study.

I will maintain all relevant documents and recognise that the DSRB staff and applicable regulatory authorities may inspect these records.

I understand that failure to comply with all applicable regulations, institutional and DSRB policies and requirements may result in the suspension or termination of this study.

I declare that there are no existing or potential conflicts of interest for any of the investigators participating in this study and their immediate family members. If there are, I have declared them in the relevant section of this application form.

By checking the "I agree" box, you confirm that you have read, understood and accept the Principal Investigator’s Declaration

☐ I have read and agree to the above declaration.

Principal Investigator: Daniel Fung
NHG DSRB Ref: 2016/00607

24 February 2017

Study Amendment Cover Note (AMD0002)

**Type of changes**
Minor

**Rationale for changes:**
- To specify clearly that data from the original study (2008/00410) will be used in this study. While it is mentioned that this is a long-term outcome study to the original study, it was not specified that data from the original study will be used, and this is necessary to study long-term changes and outcomes. Changes will be made to the main ethics application form and consent/assent forms to reflect this.

- Enrolled study participants will be informed of these changes through a telephone call. Verbal consent will be obtained from enrolled participants to use their data from the original study for this study, and this will be documented on the signed informed consent forms. This is because there will be serious inconvenience to participants if we require them to meet again face-to-face to provide reconsent. It is also unlikely that we will be able to obtain face-to-face reconsent from all enrolled participants. To avoid inconveniencing participants, we will instead obtain verbal consent from all enrolled participants and document this.

- For all enrolled participants, verbal consent will be obtained from both parent and child and this will be documented on the consent forms.

**Will the enrolled study participants be informed of these changes?**
Yes.

If 'No', please justify why enrolled Study Participants will not be informed of these changes.*
N.A.

**Will the enrolled study participants be re-consented?**
Yes.

If 'No', please justify why enrolled Study Participants will not be re-consented. *
N.A.

If you have a separate document that summarises all the amendments being submitted for review, please attach it here.
Please note that this document must contain the following information for each amendment:
- Location and name of document being amended
- Original Text
- Amended Text
- Rationale for amendment

Do the proposed amendments:*  

- Significantly change the original objectives, innovation and scientific methodology (e.g. re-design of study methodology, change in investigational product used, etc) and/or the alignment of the study to the institutions' research objectives, image and standards of the research study?  
- Require additional resources (e.g. expertise, manpower, time, budget) for the study to be properly conducted?  
- Significantly increase the overall risk or negatively alter the risk benefit ratio to the subjects of the study?

No
NHG DSRB Ref: 2016/00607

22 September 2016

A/Prof Daniel Fung
Department of Child & Adolescent Psychiatry
Institute of Mental Health

Dear A/Prof Fung

NHG DOMAIN SPECIFIC REVIEW BOARD (DSRB) APPROVAL

STUDY TITLE: Long-term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

We are pleased to inform you that the NHG Domain Specific Review Board has approved the application as titled above to be conducted in Institute of Mental Health.

The approval period is from 22 September 2016 to 21 September 2017. The NHG DSRB reference number for this study is 2016/00607. Please use this reference number for all future correspondence.

The documents reviewed are:

a) NHG DSRB Application Form: Version No. 1
b) Adolescent Assent Form: Version 3 dated 01 July 2016
c) Informed Consent Form for Adult, parent (Participant aged 21 and above): Version 3 dated 01 July 2016
d) Informed Consent Form for Quantitative Study (Participant aged below 21): Version 3 dated 01 July 2016
e) Informed Consent Form for Adult Participant (Participant aged 21 and above): Version 3 dated 01 July 2016
f) Informed Consent Form for Quantitative Study: Version 3 dated 01 July 2016
g) Child/Participant Assent Form: Version 2 dated 01 May 2016
h) Data Collection Form (Parent Interview Appt 2): Version 2 dated 01 May 2016
i) Data Collection Form (Brief Parent Interview Appt 1): Version 1 dated 28 March 2016
j) Data Collection Form (Telephone Contact): Version 1 dated 01 July 2016
k) Data Collection Form (Telephone Contact, qualitative study): Version 1 dated 01 July 2016
Continued approval is conditional upon your compliance with the following requirements:

1. Only the approved Informed Consent Form should be used. It must be signed by each subject prior to initiation of any protocol procedures. In addition, each subject should be given a copy of the signed consent form.

2. No deviation from or changes to the study should be implemented without documented approval from the NHG DSRB, except where necessary to eliminate apparent immediate hazard(s) to the study subjects.

3. Any deviation from or changes to the study to eliminate an immediate hazard should be promptly reported to the NHG DSRB within seven calendar days.

4. Please note that for studies requiring Clinical Trial Certificate, apart from the approval from NHG DSRB, no deviation from, or changes of the Research Protocol and Informed Consent Form should be implemented without documented approval from the Health Sciences Authority unless otherwise advised by the Health Sciences Authority.

5. Please submit the following to the NHG DSRB:
   a. All Unanticipated Problems Involving Risk To Subjects Or Others (UIRTOs) must be reported to the NHG DSRB. For more than minimal risk studies, all problems involving local deaths must be reported immediately within 24 hours after first knowledge by the Investigator, regardless of the causality and unexpectedness of the death. For no more than minimal risk studies, only problems involving local deaths that are related or possibly related to the study must be reported immediately within 24 hours after first knowledge by the Investigator. All other problems that fulfill the UIRTOs reporting criteria must be reported as soon as possible but not later than seven calendar days after first knowledge by the Investigator.

   b. Report(s) on any new information that may adversely affect the safety of the subject or the conduct of the study.

   c. NHG DSRB Study Status Report Form – this is to be submitted 4 to 6 weeks prior to expiry of the approval period. The study cannot continue beyond 21 September 2017 until approval is renewed by the NHG DSRB.

   d. Study completion – this is to be submitted using the NHG DSRB Study Status Report Form within 4 to 6 weeks of study completion.

Established since May 2006, the NHG Research Quality Management (RQM) Program seeks to promote the responsible conduct of research in a research culture with high ethical standards, identify potential systemic weaknesses and make recommendations for continual improvement. Hence, this research study may be randomly selected for a review by the Research Quality Management (RQM) team. For more information, please visit www.research.nhg.com.sg.

The NHG DSRB operates in accordance to the ICH GCP, Singapore Guideline for Good Clinical Practice and all applicable laws and regulations.

Yours Sincerely

A/Prof Sim Kang  
Chairman  
NHG Domain Specific Review Board A

Cc: Institutional Representative, IMH  
c/o Research Division, IMH  
Departmental Representative of Child & Adolescent Psychiatry, IMH
NHG DSRB Ref: 2016/00607

02 March 2017

A/Prof Daniel Fung
Department of Child & Adolescent Psychiatry
Institute of Mental Health

Dear A/Prof Fung

NHG DOMAIN SPECIFIC REVIEW BOARD (DSRB) APPROVAL OF AMENDMENT

STUDY TITLE: Long-term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

We are pleased to inform you that the NHG Domain Specific Review Board has reviewed and approved the amendments submitted for the application as titled above.

The documents reviewed are:

a) NHG DSRB Study Amendment ID: 2016/00607-AMD0002
b) NHG DSRB Application Form: Version No. 3
c) Adolescent Assent Form: Version 4 dated 24 February 2017
d) Child/Participant Assent Form: Version 3 dated 24 February 2017
e) Informed Consent Form for Adult, parent (Participant aged 21 and above): Version 4 dated 24 February 2017
f) Informed Consent Form for Quantitative Study (Participant aged below 21): Version 4 dated 24 February 2017
g) Informed Consent Form for Adult Participant (Participant aged 21 and above): Version 4 dated 24 February 2017

The NHG DSRB operates in accordance to the ICH GCP and all applicable laws and regulations.

Yours Sincerely

A/Prof Sim Kang
Chairman
NHG Domain Specific Review Board A
Appendix B: Consent Forms

- Parental consent form for children aged below 21
- Child assent form for children aged between 13 to 20
- Parental consent form for children aged 21 and above
- Child consent form for children aged 21 and above
1. Study Information

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

2. Purpose of the Research Study

You and your child are invited to participate in a research study. The study is being conducted to enhance our understanding of the factors that affect the long-term outcomes of children with conduct problems. We hope that your participation will help us to improve treatment for these families.

It is important to us that you first take time to read through and understand the information provided in this sheet. Nevertheless, before you take part in this research study, the study will be explained to you and you will be given the chance to ask questions. After you are properly satisfied that you understand this study, and that you wish to take part in the study, you must sign this informed consent form. You will be given a copy of this consent form to take home with you.

You and your child are invited because you previously participated in a study that looked at different treatment methods for children with conduct problems and/or hyperactivity at the Child Guidance Clinic. This two-part study is carried out to find out the long-term outcomes of families who previously participated in that study. Data from the original study will be used in this follow-up study to enable us to study the long-term outcomes of families.

This is the first part of the study, which will recruit 308 participants (154 children/adolescents, 154 parents) over a period of six months.

The second part of the study is a separate study in which 15 parents will be recruited for a more focused and in-depth interview.

3. What procedures will be followed in this study

If you take part in this study, you and your child will be asked to complete a set of questionnaires each. The questionnaires are similar to what you previously completed as part of the earlier study and ask about your child’s behaviours and emotions, and your family interactions. A brief interview will also be conducted with you to obtain some information about your child and your family. This process may take up to 1 to 1.5 hour to complete.

4. Your Responsibilities in This Study

If you agree to participate in this study, you should follow the advice given to you by the study team. You should be prepared for 1 appointment and undergo all the procedures that are outlined above.

5. What Is Not Standard Care or is Experimental in This Study

In this study, the administration of the questionnaires and interview are not standard and only

Informed Consent Form (quantitative study) Version 4, Dated 24 February 2017
conducted for the purpose of this study.

6. Possible Risks and Side Effects
Certain questions in this study may cause some level of discomfort. If any particular question makes you or your child feel uncomfortable, you may discuss this with the research team. You or your child may also choose not to answer these questions or participate in the segment of the study.

7. Possible Benefits from Participating in the Study
There is no known benefit from participation in this study. However, your participation in this study may add to the knowledge about factors that affect the long-term outcomes of children with conduct problems.

8. Costs & Payments if Participating in the Study
You will be reimbursed for your time, inconvenience and transportation costs as follows:

- If you and your child complete the questionnaires and brief interviews, your family will be paid $25.

9. Voluntary Participation
Your participation in this study is voluntary. You may stop participating in this study at any time. Your decision not to take part in this study or to stop your participation will not affect your medical care or any benefits to which you are entitled. If you decide to stop taking part in this study, you should tell the Principal Investigator.

However, the data that have been collected until the time of your withdrawal will be kept and analysed. The reason is to enable a complete and comprehensive evaluation of the study.

In the event of any new information becoming available that may be relevant to your willingness to continue in this study, you (or your legally acceptable representative, if relevant) will be informed in a timely manner by the Principal Investigator or his/her representative.

10. Compensation for Injury
This study does not involve any procedure that will put you at risk of physical injury.

By signing this consent form, you will not waive any of your legal rights or release the parties involved in this study from liability for negligence.

11. Confidentiality of Study and Medical Records
By participating in this research study, you are confirming that you have read, understood and consent to the Personal Data Protection Notification available at https://www.imh.com.sg/pdp-notification/.

Information collected for this study will be kept confidential. Your records, to the extent of the applicable laws and regulations, will not be made publicly available.

However, NHG Domain-Specific Review Board and Ministry of Health will be granted direct access to your original medical records to check study procedures and data, without making any of your information public. By signing the Informed Consent Form attached, you (or your legally acceptable representative, if relevant) are authorizing (i) collection, access to, use and storage of your “Personal Data”, and (ii) disclosure to authorised service providers and relevant third parties.

“Personal Data” means data about you which makes you identifiable (i) from such data or (ii) from that data and other information which an organisation has or likely to have access. This includes medical conditions, medications, investigations and treatment history.

Research arising in the future, based on this “Personal Data”, will be subject to review by the relevant institutional review board.

Data collected and entered into the Case Report Forms are the property of Institute of Mental Health,
In the event of any publication regarding this study, your identity will remain confidential. Information provided (without identifiers) will be transferred out of Singapore to University of Sydney for data analysis. University of Sydney will take appropriate steps to ensure confidentiality.

12. Who To Contact if You Have Questions

If you have questions about this research study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

In case of any injuries during the course of this study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

The study has been reviewed by the NHG Domain Specific Review Board (the central ethics committee) for ethics approval.

If you want an independent opinion to discuss problems and questions, obtain information and offer inputs on your rights as a research subject, you may contact the NHG Domain Specific Review Board Secretariat at 6471 3266. You can also find more information about participating in clinical research and the NHG Domain Specific Review Board at www.research.nhg.com.sg.

If you have any complaints or feedback about this research study, you may contact the Principal Investigator or the NHG Domain Specific Review Board Secretariat.
CONSENT FORM

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

Parental Consent
I voluntarily consent for my child/ward and I to take part in this research study, and consent for data from the original study to be used in this follow-up study. I have fully discussed and understood the purpose and procedures of this study. This study has been explained to me in a language that I understand. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered to my satisfaction.

Name of Parent/Guardian    Signature    Date

Investigator Statement
I, the undersigned, certify that I explained the study to the participant and to the best of my knowledge the participant signing this informed consent form clearly understands the nature, risks and benefits of his / her participation in the study.

Name of Investigator /    Signature    Date
Person administering consent
1. Study Information

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

2. Purpose of the Research Study

You and your parent are invited to participate in a research study. The study is being conducted to enhance our understanding of the factors that affect the long-term outcomes of children with conduct problems. We hope that your participation will help us to improve treatment for these families.

It is important to us that you first take time to read through and understand the information provided in this sheet. Nevertheless, before you take part in this research study, the study will be explained to you and you will be given the chance to ask questions. After you are properly satisfied that you understand this study, and that you wish to take part in the study, you must sign this assent form. You will be given a copy of this assent form to take home with you.

You are invited because you previously participated in a study that looked at different treatment methods for children with conduct problems and/or hyperactivity at the Child Guidance Clinic. This two-part study is carried out to find out the long-term outcomes of families who previously participated in that study. Data from the original study will be used in this follow-up study to enable us to study the long-term outcomes of families.

This is the first part of the study, which will recruit 308 participants (154 children/adolescents, 154 parents) over a period of six months.

The second part of the study is a separate study in which 15 parents will be recruited for a more focused and in-depth interview.

3. What procedures will be followed in this study

If you take part in this study, you and your parent will be asked to complete a set of questionnaires each. The questionnaires are similar to what you previously completed as part of the earlier study and ask about you (your behaviours and emotions) and your family interactions. A brief interview will also be conducted with your parent to obtain some information about you and your family. This process may take up to 1 to 1.5 hour to complete.

4. Your Responsibilities in This Study

If you agree to participate in this study, you should follow the advice given to you by the study team. You should be prepared for 1 appointment and undergo all the procedures that are outlined above.

5. What Is Not Standard Care or is Experimental in This Study

In this study, the administration of the questionnaires and interview are not standard and only
6. Possible Risks and Side Effects
Certain questions in this study may cause some level of discomfort. If any particular question makes you feel uncomfortable, you may discuss this with the research team. You may also choose not to answer these questions or participate in the segment of the study.

7. Possible Benefits from Participating in the Study
There is no known benefit from participation in this study. However, your participation in this study may add to the knowledge about factors that affect the long-term outcomes of children with conduct problems.

8. Costs & Payments if Participating in the Study
You will be reimbursed for your time, inconvenience and transportation costs as follows:
- If you and your parent complete the questionnaires and brief interviews, your family will be paid $25.

9. Voluntary Participation
Your participation in this study is voluntary. You may stop participating in this study at any time. Your decision not to take part in this study or to stop your participation will not affect your medical care or any benefits to which you are entitled. If you decide to stop taking part in this study, you should tell the Principal Investigator.

However, the data that have been collected until the time of your withdrawal will be kept and analysed. The reason is to enable a complete and comprehensive evaluation of the study.

In the event of any new information becoming available that may be relevant to your willingness to continue in this study, you (or your legally acceptable representative, if relevant) will be informed in a timely manner by the Principal Investigator or his/her representative.

10. Compensation for Injury
This study does not involve any procedure that will put you at risk of physical injury.

By signing this consent form, you will not waive any of your legal rights or release the parties involved in this study from liability for negligence.

11. Confidentiality of Study and Medical Records
By participating in this research study, you are confirming that you have read, understood and consent to the Personal Data Protection Notification available at https://www.imh.com.sg/pdp-notification/.

Information collected for this study will be kept confidential. Your records, to the extent of the applicable laws and regulations, will not be made publicly available.

However, NHG Domain-Specific Review Board and Ministry of Health will be granted direct access to your original medical records to check study procedures and data, without making any of your information public.

By signing the Informed Consent Form attached, you (or your legally acceptable representative, if relevant) are authorizing (i) collection, access to, use and storage of your “Personal Data”, and (ii) disclosure to authorised service providers and relevant third parties.

“Personal Data” means data about you which makes you identifiable (i) from such data or (ii) from that data and other information which an organisation has or likely to have access. This includes medical conditions, medications, investigations and treatment history.

Research arising in the future, based on this “Personal Data”, will be subject to review by the relevant
institutional review board. Data collected and entered into the Case Report Forms are the property of Institute of Mental Health. In the event of any publication regarding this study, your identity will remain confidential. Information provided (without identifiers) will be transferred out of Singapore to University of Sydney for data analysis. University of Sydney will take appropriate steps to ensure confidentiality.

12. Who To Contact if You Have Questions

If you have questions about this research study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

In case of any injuries during the course of this study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

The study has been reviewed by the NHG Domain Specific Review Board (the central ethics committee) for ethics approval.

If you want an independent opinion to discuss problems and questions, obtain information and offer inputs on your rights as a research subject, you may contact the NHG Domain Specific Review Board Secretariat at 6471 3266. You can also find more information about participating in clinical research and the NHG Domain Specific Review Board at www.research.nhg.com.sg.

If you have any complaints or feedback about this research study, you may contact the Principal Investigator or the NHG Domain Specific Review Board Secretariat.
ASSENT FORM

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

Adolescent Assent

I voluntarily consent to take part in this research study, and consent for data from the original study to be used in this follow-up study. I have fully discussed and understood the purpose and procedures of this study. This study has been explained to me in a language that I understand. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered to my satisfaction.

Name of Child                      Signature                      Date

Investigator Statement

I, the undersigned, certify that I explained the study to the participant and to the best of my knowledge the participant signing this informed consent form clearly understands the nature, risks and benefits of his / her participation in the study.

Name of Investigator / Signature Date
Person administering consent
INFORMED CONSENT FORM
(Participant aged 21 and above)

1. Study Information

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

2. Purpose of the Research Study

You and your child are invited to participate in a research study. The study is being conducted to enhance our understanding of the factors that affect the long-term outcomes of children with conduct problems. We hope that your participation will help us to improve treatment for these families.

It is important to us that you first take time to read through and understand the information provided in this sheet. Nevertheless, before you take part in this research study, the study will be explained to you and you will be given the chance to ask questions. After you are properly satisfied that you understand this study, and that you wish to take part in the study, you must sign this informed consent form. You will be given a copy of this consent form to take home with you.

You and your child are invited because you previously participated in a study that looked at different treatment methods for children with conduct problems and/or hyperactivity at the Child Guidance Clinic. This two-part study is carried out to find out the long-term outcomes of families who previously participated in that study. Data from the original study will be used in this follow-up study to enable us to study the long-term outcomes of families.

This is the first part of the study, which will recruit 308 participants (154 children/adolescents, 154 parents) over a period of six months.

The second part of the study is a separate study in which 15 parents will be recruited for a more focused and in-depth interview.

3. What procedures will be followed in this study

If you take part in this study, you and your child will be asked to complete a set of questionnaires each. The questionnaires are similar to what you previously completed as part of the earlier study and ask about your child’s behaviours and emotions, and your family interactions. A brief interview will also be conducted with you to obtain some information about your child and your family. This process may take up to 1 to 1.5 hour to complete.

4. Your Responsibilities in This Study

If you agree to participate in this study, you should follow the advice given to you by the study team. You should be prepared for 1 appointment and undergo all the procedures that are outlined above.

5. What Is Not Standard Care or is Experimental in This Study

Informed Consent Form Version 4 (adult, parent), Dated 24 February 2017
In this study, the administration of the questionnaires and interview are not standard and only conducted for the purpose of this study.

6. Possible Risks and Side Effects
Certain questions in this study may cause some level of discomfort. If any particular question makes you feel uncomfortable, you may discuss this with the research team. You may also choose not to answer these questions or participate in the segment of the study.

7. Possible Benefits from Participating in the Study
There is no known benefit from participation in this study. However, your participation in this study may add to the knowledge about factors that affect the long-term outcomes of children with conduct problems.

8. Costs & Payments if Participating in the Study
You will be reimbursed for your time, inconvenience and transportation costs as follows:
- If you and your child complete the questionnaires and brief interview, your family will be paid $25.

9. Voluntary Participation
Your participation in this study is voluntary. You may stop participating in this study at any time. Your decision not to take part in this study or to stop your participation will not affect your medical care or any benefits to which you are entitled. If you decide to stop taking part in this study, you should tell the Principal Investigator.

However, the data that have been collected until the time of your withdrawal will be kept and analysed. The reason is to enable a complete and comprehensive evaluation of the study.

In the event of any new information becoming available that may be relevant to your willingness to continue in this study, you (or your legally acceptable representative, if relevant) will be informed in a timely manner by the Principal Investigator or his/her representative.

10. Compensation for Injury
This study does not involve any procedure that will put you at risk of physical injury. By signing this consent form, you will not waive any of your legal rights or release the parties involved in this study from liability for negligence.

11. Confidentiality of Study and Medical Records
By participating in this research study, you are confirming that you have read, understood and consent to the Personal Data Protection Notification available at https://www.imh.com.sg/pdp-notification/.

Information collected for this study will be kept confidential. Your records, to the extent of the applicable laws and regulations, will not be made publicly available.

However, NHG Domain-Specific Review Board and Ministry of Health will be granted direct access to your original medical records to check study procedures and data, without making any of your information public. By signing the Informed Consent Form attached, you (or your legally acceptable representative, if relevant) are authorizing (i) collection, access to, use and storage of your “Personal Data”, and (ii) disclosure to authorised service providers and relevant third parties.

“Personal Data” means data about you which makes you identifiable (i) from such data or (ii) from that data and other information which an organisation has or likely to have access. This includes medical conditions, medications, investigations and treatment history.

Research arising in the future, based on this “Personal Data”, will be subject to review by the relevant authorities.
institutional review board.

Data collected and entered into the Case Report Forms are the property of Institute of Mental Health, and the Case Report Forms are the property of Institute of Mental Health.

In the event of any publication regarding this study, your identity will remain confidential.

Information provided (without identifiers) will be transferred out of Singapore to University of Sydney for data analysis. University of Sydney will take appropriate steps to ensure confidentiality.

12. Who To Contact if You Have Questions

If you have questions about this research study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

In case of any injuries during the course of this study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

The study has been reviewed by the NHG Domain Specific Review Board (the central ethics committee) for ethics approval.

If you want an independent opinion to discuss problems and questions, obtain information and offer inputs on your rights as a research subject, you may contact the NHG Domain Specific Review Board Secretariat at 6471 3266. You can also find more information about participating in clinical research and the NHG Domain Specific Review Board at www.research.nhg.com.sg.

If you have any complaints or feedback about this research study, you may contact the Principal Investigator or the NHG Domain Specific Review Board Secretariat.
CONSENT FORM

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

Participant Consent
I voluntarily consent to take part in this research study, and consent for data from the original study to be used in this follow-up study. I have fully discussed and understood the purpose and procedures of this study. This study has been explained to me in a language that I understand. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered to my satisfaction.

Name of Participant Signature Date

Investigator Statement
I, the undersigned, certify that I explained the study to the participant and to the best of my knowledge the participant signing this informed consent form clearly understands the nature, risks and benefits of his / her participation in the study.

Name of Investigator / Signature Date
Person administering consent
INFORMED CONSENT FORM
(Participant aged 21 and above)

1. Study Information

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

2. Purpose of the Research Study

You and your parent are invited to participate in a research study. The study is being conducted to enhance our understanding of the factors that affect the long-term outcomes of children with conduct problems. We hope that your participation will help us to improve treatment for these families.

It is important to us that you first take time to read through and understand the information provided in this sheet. Nevertheless, before you take part in this research study, the study will be explained to you and you will be given the chance to ask questions. After you are properly satisfied that you understand this study, and that you wish to take part in the study, you must sign this informed consent form. You will be given a copy of this consent form to take home with you.

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This is the first part of the study, which will recruit 308 participants (154 children/adolescents, 154 parents) over a period of six months.

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4. Your Responsibilities in This Study

If you agree to participate in this study, you should follow the advice given to you by the study team. You should be prepared for 1 appointment and undergo all the procedures that are outlined above.

5. What Is Not Standard Care or is Experimental in This Study

In this study, the administration of the questionnaires and interview are not standard and only

Informed Consent Form Version 4 (adult participant), Dated 24 February 2017
6. Possible Risks and Side Effects
Certain questions in this study may cause some level of discomfort. If any particular question makes you feel uncomfortable, you may discuss this with the research team. You may also choose not to answer these questions or participate in the segment of the study.

7. Possible Benefits from Participating in the Study
There is no known benefit from participation in this study. However, your participation in this study may add to the knowledge about factors that affect the long-term outcomes of children with conduct problems.

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- If you and your parent complete the questionnaires and brief interview, your family will be paid $25.

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In the event of any new information becoming available that may be relevant to your willingness to continue in this study, you (or your legally acceptable representative, if relevant) will be informed in a timely manner by the Principal Investigator or his/her representative.

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This study does not involve any procedure that will put you at risk of physical injury.

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Information collected for this study will be kept confidential. Your records, to the extent of the applicable laws and regulations, will not be made publicly available.

However, NHG Domain-Specific Review Board and Ministry of Health will be granted direct access to your original medical records to check study procedures and data, without making any of your information public. By signing the Informed Consent Form attached, you (or your legally acceptable representative, if relevant) are authorizing (i) collection, access to, use and storage of your “Personal Data”, and (ii) disclosure to authorised service providers and relevant third parties.

“Personal Data” means data about you which makes you identifiable (i) from such data or (ii) from that data and other information which an organisation has or likely to have access. This includes medical conditions, medications, investigations and treatment history.

Research arising in the future, based on this “Personal Data”, will be subject to review by the relevant institutional review board.

Informed Consent Form Version 4 (adult participant), Dated 24 February 2017
Data collected and entered into the Case Report Forms are the property of Institute of Mental Health. In the event of any publication regarding this study, your identity will remain confidential. Information provided (without identifiers) will be transferred out of Singapore to University of Sydney for data analysis. University of Sydney will take appropriate steps to ensure confidentiality.

12. Who To Contact if You Have Questions

If you have questions about this research study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

In case of any injuries during the course of this study, you may contact the Principal Investigator, Dr Daniel Fung at 6389 2851.

The study has been reviewed by the NHG Domain Specific Review Board (the central ethics committee) for ethics approval.

If you want an independent opinion to discuss problems and questions, obtain information and offer inputs on your rights as a research subject, you may contact the NHG Domain Specific Review Board Secretariat at 6471 3266. You can also find more information about participating in clinical research and the NHG Domain Specific Review Board at www.research.nhg.com.sg.

If you have any complaints or feedback about this research study, you may contact the Principal Investigator or the NHG Domain Specific Review Board Secretariat.
CONSENT FORM

Protocol Title:
Long-Term Outcomes of Children and Adolescents treated for Conduct Problems and/or Hyperactivity

Principal Investigator & Contact Details:
Dr Daniel Fung
10 Buangkok View, Singapore 539747
Tel: 6389 2851

Participant Consent
I voluntarily consent to take part in this research study, and consent for data from the original study to be used in this follow-up study. I have fully discussed and understood the purpose and procedures of this study. This study has been explained to me in a language that I understand. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered to my satisfaction.

Name of Participant  Signature  Date

Investigator Statement
I, the undersigned, certify that I explained the study to the participant and to the best of my knowledge the participant signing this informed consent form clearly understands the nature, risks and benefits of his / her participation in the study.

Name of Investigator / Signature  Date
Person administering consent

Informed Consent Form Version 4 (adult participant), Dated 24 February 2017
Appendix C: Data Collection Forms

- Initial Telephone Contact
- Brief Parent Interview
- Child Questionnaires (child aged 6-18)
- Parent Questionnaire (child aged 6-18)
- Child Questionnaire (child aged above 18)
- Parent Questionnaire (child aged above 18)
I am a researcher with Institute of Mental Health. I am calling to invite you to participate in a follow-up research study.

You and your child previously participated in a study that looked at different treatment methods for children with conduct problems and/or hyperactivity. We are interested in the long-term outcomes of families who previously participated in that study. Your participation will help us better understand factors that affect the long-term outcomes of these children, and help us to improve treatment for these families.

There are two parts to the study. This is the first part and it involves a face-to-face meeting with you and your child. This can be conducted at the Child Guidance Clinic, or a public venue convenient to you, e.g. Community Centre. It will take 1-1.5 hours for you and your child to complete a set of questionnaires. A brief interview will also be conducted with you to obtain some information about your child and your family.

If you and your child complete the questionnaires and brief interview, your family will be reimbursed $25 for your time.

If you are willing, I would like to arrange a time and place to have the face-to-face meeting with you. (arrange time and place)

Please let me know the best way to contact you nearer the date to confirm that both you and your child are able to make it for the meeting. (obtain phone number or email and confirm meeting details)

Thank you very much for your time.
Thank you for participating in this study. I would like to ask you some questions to have a broad understanding of how things have been for you and your family since you completed the SASSI Study.

01. Since the SASSI study, has there been any significant changes or events in the family? (Ask if each of the following has happened, and if yes, when)

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<tr>
<th>Event</th>
<th>Tick if it has happened</th>
<th>If yes, indicate when</th>
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<td>Stopped full-time schooling</td>
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<td>Lost job or was unemployed</td>
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<td>Got married</td>
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<td>Someone moved into our home</td>
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<td>Had financial problems</td>
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<td>My spouse and I separated</td>
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<td>Arrival of baby at home</td>
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<td>Someone moved out of our home</td>
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<td>Serious illness</td>
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<td>Serious illness of relative or close friend</td>
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<td>Quit or retired from full-time work</td>
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<td>Death of a relative or close friend</td>
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<td>Moved home</td>
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<td>None of the above</td>
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<td>Don’t know</td>
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02. Since your participation in the SASSI study, has your child seen a psychiatrist, psychologist, or counsellor on a regular basis? If yes, please ask for details:

| 0 | No | 1 | Yes |

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<tr>
<th>Age of child</th>
<th>Agency / Hospital</th>
<th>Problem (emotional, behavioural, learning, speech/ language, others)</th>
<th>Service / Help received</th>
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03. Has your child had any contact/arrest with the police? If Yes, please ask for details:

| 0 | No | 1 | Yes |

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<tr>
<th>Age of child</th>
<th>Problem Behaviour</th>
<th>Outcome: (E.g. Warning / Arrest)</th>
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Child Questionnaire (child aged 6 - 18)
Section A

Below is a list of items that describe kids. For each item that describes you now or within the past 6 months, please circle 2 if the item is very true or often true of you. Circle 1 if the item is somewhat or sometimes true of you. If the item is not true of you, circle 0. Please answer all items as well as you can, even if some do not seem to apply to you.

0 = Not True (as far as you know)  1 = Somewhat or Sometimes True  2 = Very True or Often True

0 1 2 1. I act too young for my age 0 1 2 21. I destroy things belonging to others

0 1 2 2. I drink alcohol without my parents’ approval (describe): 0 1 2 22. I disobey my parents

0 1 2 3. I argue a lot 0 1 2 23. I disobey at school

0 1 2 4. I fail to finish things that I start 0 1 2 24. I don’t eat as well as I should

0 1 2 5. There is very little that I enjoy 0 1 2 25. I don’t get along with other kids

0 1 2 6. I like animals 0 1 2 26. I don’t feel guilty after doing something I shouldn’t

0 1 2 7. I brag 0 1 2 27. I am jealous of others

0 1 2 8. I have trouble concentrating or paying attention 0 1 2 28. I break rules at home, school, or elsewhere

0 1 2 9. I can’t get my mind off certain thoughts; (describe): 0 1 2 29. I am afraid of certain animals, situations, or places, other than school (describe):

0 1 2 10. I have trouble sitting still 0 1 2 30. I am afraid of going to school

0 1 2 11. I’m too dependent on adults 0 1 2 31. I am afraid I might think or do something bad

0 1 2 12. I feel lonely 0 1 2 32. I feel that I have to be perfect

0 1 2 13. I feel confused or in a fog 0 1 2 33. I feel that no one loves me

0 1 2 14. I cry a lot 0 1 2 34. I feel that others are out to get me

0 1 2 15. I am pretty honest 0 1 2 35. I feel worthless or inferior

0 1 2 16. I am mean to others 0 1 2 36. I accidentally get hurt a lot

0 1 2 17. I daydream a lot 0 1 2 37. I get in many fights

0 1 2 18. I deliberately try to hurt or kill myself 0 1 2 38. I get teased a lot

0 1 2 19. I try to get a lot of attention 0 1 2 39. I hang around with kids who get in trouble

0 1 2 20. I destroy my own things 0 1 2 40. I hear sounds or voices that other people think aren’t there (describe):

Child Questionnaire (child aged 6 - 18) Version 2, 01 November 2016
Section A (continued)

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<td>0</td>
<td>1</td>
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<td>41. I act without stopping to think</td>
<td>56. Physical problems <em>without known medical cause:</em></td>
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<td>0</td>
<td>1</td>
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<td>42. I would rather be alone than with others</td>
<td>a. Aches or pains (not stomach or headaches)</td>
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<td>0</td>
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<td>43. I lie or cheat</td>
<td>b. Headaches</td>
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<td>0</td>
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<td>44. I bite my fingernails</td>
<td>c. Nausea, feel sick</td>
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<td>0</td>
<td>1</td>
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<td>45. I am nervous or tense</td>
<td>d. Problems with eyes (not corrected by glasses) (describe):</td>
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<td>e. Rashes or other skin problems</td>
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<td>46. Parts of my body twitch or make nervous movements (describe):</td>
<td>f. Stomachaches</td>
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<td>g. Vomiting, throwing up</td>
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<td>h. Other (describe):</td>
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<td>47. I have nightmares</td>
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<td>48. I am not liked by other kids</td>
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<td>49. I can do certain things better than most kids</td>
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<td>50. I am too fearful or anxious</td>
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<td>51. I feel dizzy or lightheaded</td>
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<td>52. I feel too guilty</td>
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<td>53. I eat too much</td>
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<td>54. I feel overtired without good reason</td>
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<td>55. I am overweight</td>
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<td>56. I physically attack people</td>
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<td>57. I pick my skin or other parts of my body (describe):</td>
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<td>58. I can be pretty friendly</td>
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<td>59. I like to try new things</td>
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<td>60. My school work is poor</td>
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<td>61. I am poorly coordinated or clumsy</td>
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### Section A (continued)

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<td>63. I would rather be with older kids than kids my own age</td>
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<td>64. I would rather be with younger kids than kids my own age</td>
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<td>65. I refuse to talk</td>
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<td>66. I repeat certain acts over and over (describe):</td>
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<td>67. I run away from home</td>
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<td>68. I scream a lot</td>
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<td>69. I am secretive or keep things to myself</td>
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<td>70. I see things that other people think aren't there (describe):</td>
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<td>71. I am self-conscious or easily embarrassed</td>
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<td>72. I set fires</td>
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<td>73. I can work well with my hands</td>
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<td>74. I show off or clown</td>
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<td>75. I am too shy or timid</td>
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<td>76. I sleep less than most kids</td>
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<td>77. I sleep more than most kids during day and/or night (describe):</td>
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<td>78. Inattentive or easily distracted</td>
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<td>79. I have a speech problem (describe):</td>
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<td>80. I stand up for my rights</td>
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<td>81. I steal at home</td>
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<td>82. I steal from places other than home</td>
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<td>83. I store up too many things I don't need (describe):</td>
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<td>84. I do things other people think are strange (describe):</td>
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<td>85. I have thoughts that other people would think are strange (describe):</td>
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<td>86. I am stubborn</td>
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<td>87. My moods or feelings change suddenly</td>
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<td>88. I enjoy being with people</td>
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<td>89. I am suspicious</td>
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<td>90. I swear or use dirt language</td>
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<td>91. I think about killing myself</td>
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<td>92. Swearing or obscene language</td>
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<td>93. I talk too much</td>
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<td>94. I tease others a lot</td>
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<td>95. I have a hot temper</td>
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### Section A (continued)

**0 = Not True (as far as you know) 1 = Somewhat/Sometimes True 2 = Very True /Often True**

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<tr>
<th>Item</th>
<th>Statement</th>
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<tbody>
<tr>
<td>0 1 2</td>
<td>I think about sex too much</td>
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<td>2</td>
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<td>0 1 2</td>
<td>I threaten to hurt people</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<tr>
<td>0 1 2</td>
<td>I like to help people</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<tr>
<td>0 1 2</td>
<td>I smoke, chew or sniff tobacco</td>
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<td>1</td>
<td>2</td>
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<td>0 1 2</td>
<td>I have trouble sleeping (describe):</td>
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<td>2</td>
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<td>0 1 2</td>
<td>I cut classes or skip school</td>
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<td>0 1 2</td>
<td>I don’t have much energy</td>
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<td>0 1 2</td>
<td>I am unhappy, sad, or depressed</td>
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<td>2</td>
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<td>0 1 2</td>
<td>I am louder than other kids</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>105.</td>
<td>I use drugs for nonmedical purposes (don’t include alcohol or tobacco)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>106.</td>
<td>I like to be fair to others</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>107.</td>
<td>I enjoy a good joke</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>108.</td>
<td>I like to take life easy</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>109.</td>
<td>I try to help other people when I can</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>110.</td>
<td>I wish I were of the opposite sex</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>111.</td>
<td>I keep from getting involved with others</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>112.</td>
<td>I worry a lot</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

---

**PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.**

Please write down anything else that describes your feelings, behaviour, or interests:

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________
### Section B

Using the 5-point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. **Circle** your rating in the circle to the right of the statement.

1 = extremely uncharacteristic of me  
2 = somewhat uncharacteristic of me  
3 = neither uncharacteristic nor characteristic of me  
4 = somewhat characteristic of me  
5 = extremely characteristic of me

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Some of my friends think I am a hothead.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. If I have to resort to violence to protect my rights, I will.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. When people are especially nice to me, I wonder what they want.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. I tell my friends openly when I disagree with them.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. I have become so mad that I have broken things.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. I can’t help getting into arguments when people disagree with me.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. I wonder why sometimes I feel so bitter about things.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. Once in a while, I can’t control the urge to strike another person.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. I am an even-tempered person.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. I am suspicious of overly friendly strangers.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11. I have threatened people I know.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12. I flare up quickly but get over it quickly.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13. Given enough provocation, I may hit another person.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14. When people annoy me, I may tell them what I think of them.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>15. I am sometimes eaten up with jealousy.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>16. I can think of no good reason for ever hitting a person.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>17. At times I feel I have gotten a raw deal out of life.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>18. I have trouble controlling my temper.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>19. When frustrated, I let my irritation show.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
Section B – continued

1 = extremely uncharacteristic of me
2 = somewhat uncharacteristic of me
3 = neither uncharacteristic nor characteristic of me
4 = somewhat characteristic of me
5 = extremely characteristic of me

20. I sometimes feel that people are laughing at me behind my back.  
21. I often find myself disagreeing with people.  
22. If somebody hits me, I hit back.  
23. I sometimes feel like a powder keg ready to explode.  
24. Other people always seem to get the breaks.  
25. There are people who pushed me so far that we came to blows.  
26. I know that “friends” talk about me behind my back.  
27. My friends say that I’m somewhat argumentative.  
28. Sometimes I fly off the handle for no good reason.  
29. I get into fights a little more than the average person.
Section C

There are times when most of us feel angry, or have done things we should not have done. Rate each of the items below by putting a circle around 0 (never), 1 (sometimes), or 2 (often). Do not spend a lot of time thinking about the items—just give your first response. Make sure you answer all the items (see below).

How often have you...

1. Yelled at others when they have annoyed you 0 1 2
2. Had fights with others to show who was on top 0 1 2
3. Reacted angrily when provoked by others 0 1 2
4. Taken things from other students 0 1 2
5. Gotten angry when frustrated 0 1 2
6. Vandalized something for fun 0 1 2
7. Had temper tantrums 0 1 2
8. Damaged things because you felt mad 0 1 2
9. Had a gang fight to be cool 0 1 2
10. Hurt others to win a game 0 1 2
11. Become angry or mad when you don’t get your way 0 1 2
12. Used physical force to get others to do what you want 0 1 2
13. Gotten angry or mad when you lost a game 0 1 2
14. Gotten angry when others threatened you 0 1 2
15. Used force to obtain money or things from others 0 1 2
16. Felt better after hitting or yelling at someone 0 1 2
17. Threatened and bullied someone 0 1 2
18. Made obscene phone calls for fun 0 1 2
19. Hit others to defend yourself 0 1 2
20. Gotten others to gang up on someone else 0 1 2
21. Carried a weapon to use in a fight 0 1 2
22. Gotten angry or mad or hit others when teased 0 1 2
23. Yelled at others so they would do things for you 0 1 2
No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that your family members may have done when they have a disagreement with you. For each one, how often would they do this?

1 = Once  2 = Twice  3 = Sometimes  4 = Frequently  5 = Most of the time  0 = Never

How often would they (please circle):

a. discuss an issue calmly  

b. get information to back up their side of things  

c. bring in or try to bring in someone to help settle things  

d. insult or swear at you  

e. sulk and/or refuse to talk about it  

f. stomp out of the room or house  

g. cry  

h. do or say something to spite you  

i. threaten to hit or throw something at you  

j. throw, smash, hit or kick something  

k. throw something at you  

l. push, grab, or shove you  

m. slap or spank you  

n. kick, bite, or hit you with a fist  

o. hit you or try to hit you with something  

p. beat you up  

q. choke you  

r. burn or scald you  

s. threaten you with a knife or gun  

t. use a knife or gun
Section E

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences. Here is a list of some of the things that your parents may have done when they have a disagreement with you. For each one, how often would they do this?

1 = Once  2 = Twice  3 = Sometimes  4 = Frequently  5 = Most of the time  0 = Never

How often would your parents (please circle):

a. discuss an issue calmly  

b. get information to back up their side of things 

c. bring in or try to bring in someone to help settle things 

d. insult or swear at you 

e. sulk and/or refuse to talk about it 

f. stomp out of the room or house 

g. cry 

h. do or say something to spite you 

i. threaten to hit or throw something at you 

j. throw, smash, hit or kick something 

k. throw something at you 

l. push, grab, or shove you 

m. slap or spank you 

n. kick, bite, or hit you with a fist 

o. hit you or try to hit you with something 

p. beat you up 

q. choke you 

r. burn or scald you 

s. threaten you with a knife or gun 

t. use a knife or gun

Child Questionnaire (child aged 6 - 18) Version 2, 01 November 2016
Section F

Please read each statement and decide how well it describes you. Mark your answer by circling either 0, 1, or 2 next to each statement. Do not leave any statement unrated.

<table>
<thead>
<tr>
<th>Statement</th>
<th>0 = Not at all True</th>
<th>1 = Sometimes True</th>
<th>2 = Definitely True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. You blame others for your mistakes.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. You engage in illegal activities.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. You care about how well you do at school/work.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. You act without thinking of the consequences.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Your emotions are shallow and fake.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. You lie easily and skillfully.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. You are good at keeping promises.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. You brag a lot about your abilities, accomplishments, or possessions.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. You get bored easily.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. You use or “con” other people to get what you want.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. You tease or make fun of other people.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. You feel bad or guilty when you do something wrong.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. You do risky or dangerous things.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. You act charming and nice to get things you want.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. You get angry when corrected or punished.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. You think you are better or more important than other people.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. You do not plan ahead or you leave things until the “last minute”.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18. You are concerned about the feelings of others.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19. You hide your feelings or emotions from others.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20. You keep the same friends.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Section A

Part A
Child’s particulars

01. Age of child: __________ years old

02. Level / School and/or Work: __________________________________________________________

Family information

03. What is your relationship to the child?

1 Natural mother  2 Natural father  3 Adoptive mother  4 Adoptive father
5 Stepmother  6 Stepfather  7 Foster mother  8 Foster father
9 Other [female] (please specify: ____________________________)
10 Other [male] (please specify: ____________________________)

04. Accommodation: 1 HDB  2 Private apartment  3 Private house
4 Rental  5 Others (please specify: ____________________________)

05. How many children live in your home? ______

06. How many people live in your home? ______

07. Does your child live with you? 1 Yes  2 No
08. Who is the main caregiver of your child?

1 Parent  2 Grandparent  3 Sibling  4 Relatives
5 Foster parent  6 Domestic maid  7 Daycare service provider
8 Multiple caregivers (specify) ____________________________

09. Your contact details: __________ (H) __________ (O) __________ (Hp)

10. In general, how would you say things are for you at this point in time?

1 Very good. Everything is going on well.
2 OK. I can still cope with events in my life.
3 Not too good. I am struggling to cope with events in my life.

11. How about for your partner?

1 Very good. Everything is going on well.
2 OK. He/She can still cope with events in his/her life.
3 Not too good. He/She is struggling to cope with events in his/her life.

12. How about for your child?

1 Very good. Everything is going on well.
2 OK. He/She can still cope with events in his/her life.
3 Not too good. He/She is struggling to cope with events in his/her life.

Thank you for taking the time to complete this form.
Section B

Below is a list of items that describe children and youth. For each item that describes your child now or within the past 6 months, please circle 2 if the item is very true or often true of your child. Circle 1 if the item is somewhat or sometimes true of your child. If the item is not true of your child, circle 0. Please answer all items as well as you can, even if some do not seem to apply to your child.

<table>
<thead>
<tr>
<th>0 = Not True (as far as you know)</th>
<th>1 = Somewhat or Sometimes True</th>
<th>2 = Very True or Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 1. Acts too young for his/her age.</td>
<td>0 1 2 17. Day-dreams or gets lost in his/her thoughts</td>
<td></td>
</tr>
<tr>
<td>0 1 2 2. Drinks alcohol without parents’ approval (describe):</td>
<td>0 1 2 18. Deliberately harms self or attempts suicide</td>
<td></td>
</tr>
<tr>
<td>0 1 2 3. Argues a lot</td>
<td>0 1 2 19. Demands a lot of attention</td>
<td></td>
</tr>
<tr>
<td>0 1 2 4. Fails to finish things he/she starts</td>
<td>0 1 2 20. Destroys his/her own things</td>
<td></td>
</tr>
<tr>
<td>0 1 2 5. There is very little he/she enjoys</td>
<td>0 1 2 21. Destroys things belonging to his/her family or others</td>
<td></td>
</tr>
<tr>
<td>0 1 2 6. Bowel movements (soils himself) outside toilet</td>
<td>0 1 2 22. Disobedient at home</td>
<td></td>
</tr>
<tr>
<td>0 1 2 7. Bragging, boasting</td>
<td>0 1 2 23. Disobedient at school</td>
<td></td>
</tr>
<tr>
<td>0 1 2 8. Can't concentrate, can't pay attention for long</td>
<td>0 1 2 24. Doesn't eat well</td>
<td></td>
</tr>
<tr>
<td>0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe):</td>
<td>0 1 2 25. Doesn't get along with other kids</td>
<td></td>
</tr>
<tr>
<td>0 1 2 10. Can't sit still, restless, or hyperactive</td>
<td>0 1 2 26. Doesn't seem to feel guilty after misbehaving</td>
<td></td>
</tr>
<tr>
<td>0 1 2 11. Clings to adults or too dependent</td>
<td>0 1 2 27. Easily jealous</td>
<td></td>
</tr>
<tr>
<td>0 1 2 12. Complains of loneliness</td>
<td>0 1 2 28. Breaks rules at home, school, or elsewhere</td>
<td></td>
</tr>
<tr>
<td>0 1 2 13. Confused or seems to be in a fog</td>
<td>0 1 2 29. Fears certain animals, situations, or places other than school: describe:</td>
<td></td>
</tr>
<tr>
<td>0 1 2 14. Cries a lot</td>
<td>0 1 2 30. Fears going to school</td>
<td></td>
</tr>
<tr>
<td>0 1 2 15. Cruel to animals</td>
<td>0 1 2 31. Fears he/she might think or do something bad</td>
<td></td>
</tr>
<tr>
<td>0 1 2 16. Cruelty, bullying, or meanness to others</td>
<td>0 1 2 32. Feels he/she has to be perfect</td>
<td></td>
</tr>
</tbody>
</table>
Section B (continued)

<table>
<thead>
<tr>
<th></th>
<th>0 = Not True (as far as you know)</th>
<th>1 = Somewhat or Sometimes True</th>
<th>2 = Very True or Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.</td>
<td>Feels or complains that no one loves him/her</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>34.</td>
<td>Feels others are out to get him/her</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>35.</td>
<td>Feels worthless or inferior</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>36.</td>
<td>Gets hurt a lot, accident-prone</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>37.</td>
<td>Gets in many fights</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>38.</td>
<td>Gets teased a lot</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>39.</td>
<td>Hangs around with others who get in trouble</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>40.</td>
<td>Hears sounds or voices that aren't there</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>41.</td>
<td>Impulsive or acts without thinking</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>42.</td>
<td>Would rather be alone than with others</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>43.</td>
<td>Lying or cheating</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>44.</td>
<td>Bites fingernails</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>45.</td>
<td>Nervous, highstrung, or tense</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>46.</td>
<td>Nervous movements or twitching (describe):</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>47.</td>
<td>Nightmares</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>48.</td>
<td>Not liked by other kids</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>49.</td>
<td>Constipated, doesn’t move bowels</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>50.</td>
<td>Too fearful or anxious</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>51.</td>
<td>Feels dizzy or lightheaded</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>52.</td>
<td>Feels too guilty</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>53.</td>
<td>Overeating</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>54.</td>
<td>Overtired without good reason</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>55.</td>
<td>Overweight</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>56.</td>
<td>Physical problems without known medical cause:</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>a.</td>
<td>Aches or pains (not stomach or headaches)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>b.</td>
<td>Headaches</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>c.</td>
<td>Nausea, feel sick</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>d.</td>
<td>Problems with eyes (not if corrected by glasses)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>e.</td>
<td>Rashes or other skin problems</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>f.</td>
<td>Stomachaches or cramps</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>g.</td>
<td>Vomiting, throwing up</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>h.</td>
<td>Other (describe):</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.
**Section B (continued)**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>61. Poor school work</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>62. Poorly coordinated or clumsy</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>63. Prefers being with older kids</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>64. Prefers being with younger kids</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>65. Refuses to talk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>66. Repeats certain acts over and over; compulsions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>67. Runs away from home</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>68. Screams a lot</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>69. Secretive, keeps things to self</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>70. Sees things that aren't there (describe): ____________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>71. Self-conscious or easily embarrassed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>72. Sets fires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>73. Sexual problems (describe): ____________</td>
<td></td>
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</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>74. Showing off or clowning</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>75. Too shy or timid</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>76. Sleeps less than most kids</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>77. Sleeps more than most kids during day and/or night (describe): ____________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>78. Inattentive or easily distracted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>79. Speech problem (describe): ____________</td>
<td></td>
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</tr>
</tbody>
</table>

**PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.**
Section B – continued

<table>
<thead>
<tr>
<th>0 = Not True (as far as you know)</th>
<th>1 = Somewhat or Sometimes True</th>
<th>2 = Very True or Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2</td>
<td></td>
<td>0 1 2</td>
</tr>
<tr>
<td>99. Smokes, chews, or sniffs tobacco</td>
<td>107. Wets self during the day</td>
<td>0 1 2</td>
</tr>
<tr>
<td>100. Trouble sleeping (describe):</td>
<td>108. Wets the bed</td>
<td>0 1 2</td>
</tr>
<tr>
<td>101. Truancy, skips school</td>
<td>110. Wishes to be of opposite sex</td>
<td>0 1 2</td>
</tr>
<tr>
<td>102. Underactive, slow moving, or lacks energy</td>
<td>111. Withdrawn, doesn't get involved with others</td>
<td>0 1 2</td>
</tr>
<tr>
<td>103. Unhappy, sad, or depressed</td>
<td>112. Worries</td>
<td>0 1 2</td>
</tr>
<tr>
<td>104. Unusually loud</td>
<td>113. Please write in any problems your child has that were not listed above:</td>
<td>0 1 2</td>
</tr>
<tr>
<td>105. Uses drugs for non-medical purposes (don’t include alcohol or tobacco) (describe):</td>
<td></td>
<td>0 1 2</td>
</tr>
<tr>
<td>106. Vandalism</td>
<td></td>
<td>0 1 2</td>
</tr>
</tbody>
</table>

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.
### Section C

Instructions: Read each statement and decide how well it describes your child. Mark your answer by circling either 0, 1, or 2 for each statement. Do not leave any statement unrated.

<table>
<thead>
<tr>
<th>Statement</th>
<th>0 = Not at all true</th>
<th>1 = Sometimes true</th>
<th>2 = Definitely true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Blames others for his/her mistakes.</td>
<td></td>
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<tr>
<td>2. Engages in illegal activities.</td>
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<tr>
<td>3. Is concerned about how well he/she does at school/work.</td>
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<tr>
<td>5. His/her emotions seem shallow and not genuine.</td>
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<tr>
<td>7. Is good at keeping promises.</td>
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<tr>
<td>8. Brags excessively about his/her abilities, accomplishments, or possessions.</td>
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<tr>
<td>10. Uses or “cons” other people to get what he/she wants.</td>
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<tr>
<td>11. Teases or makes fun of other people.</td>
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<tr>
<td>12. Feels bad or guilty when he/she does something wrong.</td>
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<td></td>
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<tr>
<td>13. Engages in risky or dangerous activities.</td>
<td></td>
<td></td>
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<tr>
<td>14. Can be charming at times, but in ways that seem insincere or superficial.</td>
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<tr>
<td>15. Becomes angry when corrected or punished.</td>
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<tr>
<td>16. Seems to think that he/she is better or more important than other people.</td>
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<tr>
<td>17. Does not plan ahead or leaves things to the “last minute”.</td>
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<td></td>
</tr>
<tr>
<td>18. Is concerned about the feelings of others.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Does not show feelings or emotions.</td>
<td></td>
<td></td>
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<tr>
<td>20. Keeps the same friends.</td>
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</tbody>
</table>
Section D

Below are a number of common problems children have. Please rate each item according to your child’s behaviour in the last month. For each item, ask yourself, “How much of a problem has this been last month?” and circle the best answer for each one.

0 = Not true at all (Never, seldom)  
2 = Pretty much true (Often, quite a bit)  
3 = Very much true (Very often, very frequent)

1. Inattentive, easily distracted 0 1 2 3
2. Angry and resentful 0 1 2 3
3. Difficulty doing or completing homework 0 1 2 3
4. Is always “on the go” or acts as if driven by a motor 0 1 2 3
5. Short attention span 0 1 2 3
6. Argues with adults 0 1 2 3
7. Fidgets with hands or feet or squirms in seat 0 1 2 3
8. Fails to complete assignments 0 1 2 3
9. Hard to control in malls or while grocery shopping 0 1 2 3
10. Messy or disorganized at home or school 0 1 2 3
11. Loses temper 0 1 2 3
12. Needs close supervision to get through assignments 0 1 2 3
13. Only attends if it is something he/she is very interested in 0 1 2 3
14. Runs about or climbs excessively in situations where it is inappropriate 0 1 2 3
15. Distractibility or attention span a problem 0 1 2 3
16. Irritable 0 1 2 3
17. Avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained mental effort (such as schoolwork or homework) 0 1 2 3
18. Restless in the “squirmy” sense 0 1 2 3
19. Gets distracted when given instructions to do something 0 1 2 3
20. Actively defies or refuses to comply with adults’ requests 0 1 2 3
21. Has trouble concentrating in class 0 1 2 3
22. Has difficulty waiting in lines or awaiting turn in games or group situations 0 1 2 3
23. Leaves seat in classroom or in other situations in which remaining seated is expected 0 1 2 3
24. Deliberately does things that annoy people 0 1 2 3
25. Does not follow through on instructions and fails to finish schoolwork, chores or duties in the workplace (not due to oppositional behaviour or failure to understand instructions) 0 1 2 3
26. Has difficulty playing or engaging in leisure activities quietly 0 1 2 3
27. Easily frustrated in efforts 0 1 2 3
Section E

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that you may have done when you had a disagreement with your spouse.

1 = Once  2 = Twice  3 = Sometimes  4 = Frequently  5 = Most of the time  0 = Never

How often would you (please circle):

a. discuss an issue calmly
   1  2  3  4  5  0

b. get information to back up your side of things
   1  2  3  4  5  0

c. bring in or try to bring in someone to help settle things
   1  2  3  4  5  0

d. insult or swear at him/her
   1  2  3  4  5  0

e. sulk and/or refuse to talk about it
   1  2  3  4  5  0

f. stomp out of the room or house
   1  2  3  4  5  0

g. cry
   1  2  3  4  5  0

h. do or say something to spite him/her
   1  2  3  4  5  0

i. threaten to hit or throw something at him/her
   1  2  3  4  5  0

j. throw, smash, hit or kick something
   1  2  3  4  5  0

k. throw something at him/her
   1  2  3  4  5  0

l. push, grab, or shove him/her
   1  2  3  4  5  0

m. slap or spank him/her
   1  2  3  4  5  0

n. kick, bite, or hit him/her with a fist
   1  2  3  4  5  0

o. hit or try to hit him/her with something
   1  2  3  4  5  0

p. beat him/her up
   1  2  3  4  5  0

q. burn or scald him/her
   1  2  3  4  5  0

r. choke him/her
   1  2  3  4  5  0

s. threaten him/her with a knife or gun
   1  2  3  4  5  0

t. use a knife or gun
   1  2  3  4  5  0
Section F

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that **your spouse may have done to you when you had a disagreement**. For each one, how often would they do this?

1 = Once  2 = Twice  3 = Sometimes  4 = Frequently  5 = Most of the time  0 = Never

How often would **he/she** (please circle):

<table>
<thead>
<tr>
<th>a. discuss an issue calmly</th>
<th>1 2 3 4 5 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. get information to back up their side of things</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>c. bring in or try to bring in someone to help settle things</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>d. insult or swear at you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>e. sulk and/or refuse to talk about it</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>f. stomp out of the room or house</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>g. cry</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>h. do or say something to spite you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>i. threaten to hit or throw something at you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>j. throw, smash, hit or kick something</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>k. throw something at you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>l. push, grab, or shove you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>m. slap or spank you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>n. kick, bite, or hit you with a fist</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>o. hit you or try to hit you with something</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>p. beat you up</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>q. choke you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>r. burn or scald you</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>s. threaten you with a knife or gun</td>
<td>1 2 3 4 5 0</td>
</tr>
<tr>
<td>t. use a knife or gun</td>
<td>1 2 3 4 5 0</td>
</tr>
</tbody>
</table>
Child Questionnaire (child aged above 18)

Protocol ID
DSRB A/16/00607

SUBJECT ID:

SUBJECT INITIALS:

DATE OF VISIT:
(DD-MM-YYYY)
Section A

Below is a list of items that describe people. For each item, please circle 0, 1 or 2 to describe yourself over the past 6 months. Please answer all items as well as you can, even if some do not seem to apply to you.

0 = Not True (as far as you know)  1 = Somewhat or Sometimes True  2 = Very True or Often True

0  1  2  1. I am too forgetful.  0  1  2  21. I damage or destroy things belonging to others
0  1  2  2. I make good use of my opportunities  0  1  2  22. I worry about my future
0  1  2  3. I argue a lot  0  1  2  23. I break rules at work or elsewhere
0  1  2  4. I work up to my ability  0  1  2  24. I don’t eat as well as I should
0  1  2  5. I blame others for my problems.  0  1  2  25. I don’t get along with other people
0  1  2  6. I use drugs (other than alcohol and nicotine) for nonmedical purposes (describe): ______________
0  1  2  7. I brag  0  1  2  26. I don’t feel guilty after doing something I shouldn’t
0  1  2  8. I have trouble concentrating or paying attention for long  0  1  2  27. I am jealous of others
0  1  2  9. I can’t get my mind off certain thoughts (describe):____________________
0  1  2  10. I have trouble sitting still  0  1  2  28. I get along badly with my family
0  1  2  11. I’m too dependent on others  0  1  2  29. I am afraid of certain animals, situations, or places (describe):
0  1  2  12. I feel lonely  0  1  2  30. My relations with the opposite sex are poor
0  1  2  13. I feel confused or in a fog  0  1  2  31. I am afraid I might think or do something bad
0  1  2  14. I cry a lot  0  1  2  32. I feel that I have to be perfect
0  1  2  15. I am pretty honest  0  1  2  33. I feel that no one loves me
0  1  2  16. I am mean to others  0  1  2  34. I feel that others are out to get me
0  1  2  17. I daydream a lot  0  1  2  35. I feel worthless or inferior
0  1  2  18. I deliberately try to hurt or kill myself  0  1  2  36. I accidentally get hurt a lot
0  1  2  19. I try to get a lot of attention  0  1  2  37. I get in many fights
0  1  2  20. I damage or destroy my things  0  1  2  38. My relations with neighbours are poor
0  1  2  21. I damage or destroy things belonging to others  0  1  2  39. I hang around people who get in trouble
0  1  2  22. I worry about my future  0  1  2  40. I hear sounds or voices that other people think aren’t there (describe): ______________
### Section A (continued)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>0 = Not True (as far as you know)</th>
<th>1 = Somewhat/Sometimes True</th>
<th>2 = Very True /Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>41. I am impulsive or act without thinking</td>
<td>56. Physical problems without known medical cause:</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td>a. Aches or pains (not stomach or headaches)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>42. I would rather be alone than with others</td>
<td>b. Headaches</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td>c. Nausea, feel sick</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>43. I lie or cheat</td>
<td>d. Problems with eyes (not if corrected by glasses)</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td>(describe):_______________</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>44. I feel overwhelmed by my responsibilities</td>
<td>e. Rashes or other skin problems</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
<td>f. Stomachaches</td>
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<td>45. I am nervous or tense</td>
<td>g. Vomiting, throwing up</td>
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<td>46. Parts of my body twitch or make nervous movements (describe): ___________</td>
<td>h. Heart pounding or racing</td>
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<td></td>
<td></td>
<td>i. Numbness or tingling in body parts</td>
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<td>47. I lack self-confidence</td>
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<td>48. I am not liked by others</td>
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<td></td>
<td>49. I can do certain things better than other people</td>
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<td>2</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>50. I am too fearful or anxious</td>
<td>57. I physically attack people</td>
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<td>2</td>
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<td></td>
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<td></td>
<td>51. I feel dizzy or lightheaded</td>
<td>58. I pick my skin or other parts of my body (describe):</td>
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<td>2</td>
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<td></td>
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<td></td>
<td>52. I feel too guilty</td>
<td>59. I fail to finish things I should do</td>
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<td>0</td>
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<td>2</td>
<td></td>
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<td></td>
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<td></td>
<td>53. I have trouble planning for the future</td>
<td>60. There is very little that I enjoy</td>
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<td></td>
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<td></td>
<td>54. I feel tired without good reason</td>
<td>61. My work performance is poor</td>
</tr>
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<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>55. My moods swing between elation and depression</td>
<td>62. I am poorly coordinated or clumsy</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
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</tr>
</tbody>
</table>
Section A (continued)

0 = Not True (as far as you know) 1 = Somewhat/Sometimes True 2 = Very True /Often True

63. I would rather be with older people than with people of my own age

79. I have a speech problem (describe): ____________________

64. I have trouble setting priorities

80. I stand up for my rights

65. I refuse to talk

81. My behavior is very changeable

66. I repeat certain acts over and over (describe):

82. I steal

67. I have trouble making or keeping friends

83. I am easily bored

68. I scream or yell a lot

84. I do things that other people think are strange (describe):

69. I am secretive or keep things to myself

85. I have thoughts that other people would think are strange (describe):

70. I see things that other people think aren't there (describe):

86. I am stubborn, sullen or irritable

71. I am self-conscious or easily embarrassed

87. My moods or feelings change suddenly

72. I worry about my family

88. I enjoy being with people

73. I meet my responsibilities to my family

89. I rush into things without considering the risks

74. I show off or clown

90. I drink too much alcohol or get drunk

75. I am too shy or timid

91. I think about killing myself

76. My behavior is irresponsible

92. I do things that may cause me trouble with the law (describe):

77. I sleep more than most other people during day and/or night (describe):____________

93. I talk too much

78. I have trouble making decisions

94. I tease others a lot

95. I have a hot temper
Section A (continued)

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>96. I think about sex too much</td>
<td>0 1 2</td>
<td>111. I keep from getting involved with others</td>
</tr>
<tr>
<td>97. I threaten to hurt people</td>
<td>0 1 2</td>
<td>112. I worry a lot</td>
</tr>
<tr>
<td>98. I like to help people</td>
<td>0 1 2</td>
<td>113. I worry about my relations with the opposite sex</td>
</tr>
<tr>
<td>99. I dislike staying in one place for very long</td>
<td>0 1 2</td>
<td>114. I fail to pay my debts or meet other financial responsibilities</td>
</tr>
<tr>
<td>100. I have trouble sleeping (describe):</td>
<td>0 1 2</td>
<td>115. I feel restless or fidgety</td>
</tr>
<tr>
<td>101. I stay away from my job even when I'm not sick and not on vacation</td>
<td>0 1 2</td>
<td>116. I get upset too easily</td>
</tr>
<tr>
<td>102. I don't have much energy</td>
<td>0 1 2</td>
<td>117. I have trouble managing money or credit cards</td>
</tr>
<tr>
<td>103. I am unhappy, sad, or depressed</td>
<td>0 1 2</td>
<td>118. I am too impatient</td>
</tr>
<tr>
<td>104. I am louder than others</td>
<td>0 1 2</td>
<td>119. I am not good at details</td>
</tr>
<tr>
<td>105. People think I am disorganised</td>
<td>0 1 2</td>
<td>120. I drive too fast</td>
</tr>
<tr>
<td>106. I try to be fair to others</td>
<td>0 1 2</td>
<td>121. I tend to be late for appointments</td>
</tr>
<tr>
<td>107. I feel that I can't succeed</td>
<td>0 1 2</td>
<td>122. I have trouble keeping a job</td>
</tr>
<tr>
<td>108. I tend to lose things</td>
<td>0 1 2</td>
<td>123. I am a happy person</td>
</tr>
<tr>
<td>109. I like to try new things</td>
<td>0 1 2</td>
<td>124. In the past 6 months, about how many times per day did you use tobacco (including smokeless tobacco)?________ times per day</td>
</tr>
<tr>
<td>110. I wish I were of the opposite sex</td>
<td>0 1 2</td>
<td>125. In the past 6 months, on how many days were you drunk? ________ days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>126. In the past 6 months, on how many days did you use drugs for nonmedical purposes (including marijuana, cocaine and other drugs, except alcohol and nicotine)? ________ days</td>
</tr>
</tbody>
</table>

**PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.**
Section B

Using the 5-point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Circle your rating in the circle to the right of the statement.

1 = extremely uncharacteristic of me
2 = somewhat uncharacteristic of me
3 = neither uncharacteristic nor characteristic of me
4 = somewhat characteristic of me
5 = extremely characteristic of me

1. Some of my friends think I am a hothead.  
2. If I have to resort to violence to protect my rights, I will.  
3. When people are especially nice to me, I wonder what they want.  
4. I tell my friends openly when I disagree with them.  
5. I have become so mad that I have broken things.  
6. I can’t help getting into arguments when people disagree with me.  
7. I wonder why sometimes I feel so bitter about things.  
8. Once in a while, I can’t control the urge to strike another person.  
9. I am an even-tempered person.  
10. I am suspicious of overly friendly strangers.  
11. I have threatened people I know.  
12. I flare up quickly but get over it quickly.  
13. Given enough provocation, I may hit another person.  
14. When people annoy me, I may tell them what I think of them.  
15. I am sometimes eaten up with jealousy.  
16. I can think of no good reason for ever hitting a person.  
17. At times I feel I have gotten a raw deal out of life.  
18. I have trouble controlling my temper.  
19. When frustrated, I let my irritation show.
Section B – continued

<p>| | | | | | |</p>
<table>
<thead>
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</thead>
<tbody>
<tr>
<td></td>
<td>1 = extremely uncharacteristic of me</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20</td>
<td>I sometimes feel that people are laughing at me behind my back.</td>
<td></td>
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<tr>
<td></td>
<td>1 = extremely uncharacteristic of me</td>
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<td></td>
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<tr>
<td></td>
<td>2 = somewhat uncharacteristic of me</td>
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<tr>
<td></td>
<td>3 = neither uncharacteristic nor characteristic of me</td>
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<td></td>
<td>4 = somewhat characteristic of me</td>
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<tr>
<td></td>
<td>5 = extremely characteristic of me</td>
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</tr>
<tr>
<td>21</td>
<td>I often find myself disagreeing with people.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>22</td>
<td>If somebody hits me, I hit back.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>23</td>
<td>I sometimes feel like a powder keg ready to explode.</td>
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<td></td>
<td></td>
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<tr>
<td>24</td>
<td>Other people always seem to get the breaks.</td>
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<td></td>
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<tr>
<td>25</td>
<td>There are people who pushed me so far that we came to blows.</td>
<td></td>
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</tr>
<tr>
<td>26</td>
<td>I know that “friends” talk about me behind my back.</td>
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<tr>
<td>27</td>
<td>My friends say that I'm somewhat argumentative.</td>
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<tr>
<td>28</td>
<td>Sometimes I fly off the handle for no good reason.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>I get into fights a little more than the average person.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Section C
There are times when most of us feel angry, or have done things we should not have done. Rate each of the items below by putting a circle around 0 (never), 1 (sometimes), or 2 (often). Do not spend a lot of time thinking about the items—just give your first response. Make sure you answer all the items (see below).

How often have you...

1. Yelled at others when they have annoyed you
2. Had fights with others to show who was on top
3. Reacted angrily when provoked by others
4. Taken things from other students
5. Gotten angry when frustrated
6. Vandalized something for fun
7. Had temper tantrums
8. Damaged things because you felt mad
9. Had a gang fight to be cool
10. Hurt others to win a game
11. Become angry or mad when you don’t get your way
12. Used physical force to get others to do what you want
13. Gotten angry or mad when you lost a game
14. Gotten angry when others threatened you
15. Used force to obtain money or things from others
16. Felt better after hitting or yelling at someone
17. Threatened and bullied someone
18. Made obscene phone calls for fun
19. Hit others to defend yourself
20. Gotten others to gang up on someone else
21. Carried a weapon to use in a fight
22. Gotten angry or mad or hit others when teased
23. Yelled at others so they would do things for you
Section D

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that **your family members may have done when they have a disagreement with you.** For each one, how often would they do this?

1 = Once  
2 = Twice  
3 = Sometimes  
4 = Frequently  
5 = Most of the time  
0 = Never

How often would they (please circle):

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. discuss an issue calmly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b. get information to back up their side of things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c. bring in or try to bring in someone to help settle things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d. insult or swear at you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e. sulk and/or refuse to talk about it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>f. stomp out of the room or house</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>g. cry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>h. do or say something to spite you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>i. threaten to hit or throw something at you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>j. throw, smash, hit or kick something</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>k. throw something at you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>l. push, grab, or shove you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>m. slap or spank you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>n. kick, bite, or hit you with a fist</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>o. hit you or try to hit you with something</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>p. beat you up</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>q. choke you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>r. burn or scald you</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>s. threaten you with a knife or gun</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>t. use a knife or gun</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Section E

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that your parents may have done when they have a disagreement with you. For each one, how often would they do this?

1 = Once  2 = Twice  3 = Sometimes  4 = Frequently  5 = Most of the time  0 = Never

How often would your parents (please circle):

a. discuss an issue calmly
   1  2  3  4  5  0
b. get information to back up their side of things
   1  2  3  4  5  0
c. bring in or try to bring in someone to help settle things
   1  2  3  4  5  0
d. insult or swear at you
   1  2  3  4  5  0
e. sulk and/or refuse to talk about it
   1  2  3  4  5  0
f. stomp out of the room or house
   1  2  3  4  5  0
g. cry
   1  2  3  4  5  0
h. do or say something to spite you
   1  2  3  4  5  0
i. threaten to hit or throw something at you
   1  2  3  4  5  0
j. throw, smash, hit or kick something
   1  2  3  4  5  0
k. throw something at you
   1  2  3  4  5  0
l. push, grab, or shove you
   1  2  3  4  5  0
m. slap or spank you
   1  2  3  4  5  0
n. kick, bite, or hit you with a fist
   1  2  3  4  5  0
o. hit you or try to hit you with something
   1  2  3  4  5  0
p. beat you up
   1  2  3  4  5  0
q. choke you
   1  2  3  4  5  0
r. burn or scald you
   1  2  3  4  5  0
s. threaten you with a knife or gun
   1  2  3  4  5  0
t. use a knife or gun
   1  2  3  4  5  0
Section F

Instructions: Please read each statement and decide how well it describes you. Mark your answer by circling either 0, 1, or 2 next to each statement. Do not leave any statement unrated.

0 = Not at all True  1 = Sometimes True  2 = Definitely True

1. You blame others for your mistakes.
2. You engage in illegal activities.
3. You care about how well you do at school/work.
4. You act without thinking of the consequences.
5. Your emotions are shallow and fake.
6. You lie easily and skillfully.
7. You are good at keeping promises.
8. You brag a lot about your abilities, accomplishments, or possessions.
10. You use or “con” other people to get what you want.
11. You tease or make fun of other people.
12. You feel bad or guilty when you do something wrong.
13. You do risky or dangerous things.
14. You act charming and nice to get things you want.
15. You get angry when corrected or punished.
16. You think you are better or more important than other people.
17. You do not plan ahead or you leave things until the “last minute”.
18. You are concerned about the feelings of others.
19. You hide your feelings or emotions from others.
20. You keep the same friends.
Parent Questionnaire (child aged above 18)

SUBJECT ID:          
SUBJECT INITIALS:    
DATE OF VISIT:       
(DD-MM-YYYY)         

Section A

Part A
Child’s particulars

01. Age of child: ____________ years old

02. Level / School and/or Work: ______________________________________________

Family information

03. What is your relationship to the child?

   1 Natural mother   2 Natural father   3 Adoptive mother   4 Adoptive father
   5 Stepmother       6 Stepfather       7 Foster mother      8 Foster father

   9 Other [female] (please specify: _____________________________)

   10 Other [male] (please specify: ________________________________)

04. Accommodation: 1 HDB       2 Private apartment       3 Private house

                      4 Rental       5 Others (please specify: _____________________________)

05. How many children live in your home? _______

06. How many people live in your home? _______

07. Does your child live with you? 1 Yes 2 No
08. **Who is the main caregiver of your child?**

   1 Parent       2 Grandparent       3 Sibling       4 Relatives
   5 Foster parent 6 Domestic maid    7 Daycare service provider
   8 Multiple caregivers (specify) __________________________

09. **Your contact details:** ___________ (H) ___________ (O) ___________ (Hp)

10. **In general, how would you say things are for you at this point in time?**

   1 Very good. Everything is going on well.
   2 OK. I can still cope with events in my life.
   3 Not too good. I am struggling to cope with events in my life.

11. **How about for your partner?**

   1 Very good. Everything is going on well.
   2 OK. He/She can still cope with events in his/her life.
   3 Not too good. He/She is struggling to cope with events in his/her life.

12. **How about for your child?**

   1 Very good. Everything is going on well.
   2 OK. He/She can still cope with events in his/her life.
   3 Not too good. He/She is struggling to cope with events in his/her life.

---

Thank you for taking the time to complete this form.
Section B

Below is a list of items that describe people. As you read each item, please decide whether it has been true of the adult over the past 6 months. Then circle 0, 1, 2, to describe the adult. Please answer all items as well as you can, even if some do not seem to apply to the adult.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Description</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1. Is too forgetful</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>17. Day-dreams or gets lost in his/her thoughts</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2. Makes good use of his/her opportunities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>18. Deliberately harms self or attempts suicide</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3. Argues a lot</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>19. Demands a lot of attention</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>4. Works up to ability</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>20. Damages or destroys his/her own things</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5. Blames others for own problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>21. Damages or destroys things belonging to others</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>6. Uses drugs (other than alcohol or nicotine) for nonmedical purposes (describe): ______________</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>22. Worries about his/her future</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>7. Bragging, boasting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>23. Breaks rules at work or elsewhere</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>8. Can't concentrate, can't pay attention for long</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>24. Doesn't eat well</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>9. Can't get mind off certain thoughts; obsessions (describe): ______________</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>25. Doesn't get along with other people</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>10. Can't sit still, restless, or hyperactive</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>26. Doesn't seem to feel guilty after misbehaving</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>11. Too dependent on others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>27. Easily jealous</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>12. Complains of loneliness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>28. Gets along badly with family</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>13. Confused or seems to be in a fog</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>29. Fears certain animals, situations, or places (describe): ______________</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>14. Cries a lot</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>30. Poor relations with opposite sex</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>15. Is pretty honest</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>31. Fears he/she might think or do something bad</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>16. Cruelty, bullying, or meanness to others</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>32. Feels he/she has to be perfect</td>
</tr>
</tbody>
</table>

*PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.*
### Section B (continued)

<table>
<thead>
<tr>
<th></th>
<th>0 = Not True (as far as you know)</th>
<th>1 = Somewhat or Sometimes True</th>
<th>2 = Very True or Often True</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>33.</td>
<td>Feels or complains that no one loves him/her</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Feels others are out to get him/her</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Feels worthless or inferior</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Gets hurt a lot, accident-prone</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Gets in many fights</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>His/her relations with neighbors are poor</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>Hangs around people who get in trouble</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>Hears sounds or voices that aren’t there (describe):</td>
<td>0 1 2</td>
<td></td>
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</tr>
<tr>
<td>41.</td>
<td>Impulsive or acts without thinking</td>
<td>0 1 2</td>
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</tr>
<tr>
<td>42.</td>
<td>Would rather be alone than with others</td>
<td>0 1 2</td>
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<tr>
<td>43.</td>
<td>Lying or cheating</td>
<td>0 1 2</td>
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<tr>
<td>44.</td>
<td>Feels overwhelmed by responsibilities</td>
<td>0 1 2</td>
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<tr>
<td>45.</td>
<td>Nervous, highstrung, or tense</td>
<td>0 1 2</td>
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<tr>
<td>46.</td>
<td>Nervous movements or twitching (describe):</td>
<td>0 1 2</td>
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<tr>
<td>47.</td>
<td>Lacks self-confidence</td>
<td>0 1 2</td>
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<tr>
<td>48.</td>
<td>Not liked by others</td>
<td>0 1 2</td>
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<tr>
<td>49.</td>
<td>Can do certain things better than other people</td>
<td>0 1 2</td>
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<tr>
<td>50.</td>
<td>Too fearful or anxious</td>
<td>0 1 2</td>
<td></td>
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<tr>
<td>51.</td>
<td>Feels dizzy or lightheaded</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>52.</td>
<td>Feels too guilty</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53.</td>
<td>Has trouble planning for the future</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>54.</td>
<td>Feels tired without good reason</td>
<td>0 1 2</td>
<td></td>
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</tr>
<tr>
<td>55.</td>
<td>Mood swing between elation and depression</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56.</td>
<td>Physical problems <strong>without known medical cause:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57.</td>
<td>Physically attacks people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Aches or pains <em>(not stomach or headache)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Headaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Nausea, feel sick</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>d. Problems with eyes <em>(not if corrected by glasses)</em> (describe):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Rashes or other skin problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Stomachaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>g. Vomiting, throwing up</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>58.</td>
<td>Picks skin, or other parts of his/her body (describe):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59.</td>
<td>Fails to finish things he/she should do</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td>There is very little that he/she enjoys</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.**
Section B (continued)

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>61. Poor work performance</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>62. Poorly coordinated or clumsy</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>63. Would rather be with older people than with people of own age</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>64. Has trouble setting priorities</td>
<td>0</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>65. Refuses to talk</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>66. Repeats certain acts over and over; compulsions (describe): ________________</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>67. Has trouble making or keeping friends</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>68. Screams or yells a lot</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>69. Secretive, keeps things to self</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>70. Sees things that aren't there (describe): ________________</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>71. Self-conscious or easily embarrassed</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>72. Worries about his/her family</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>73. Meets responsibilities to his/her family</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>74. Showing off or clowning</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>75. Too shy or timid</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>76. Irresponsible behaviour</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>77. Sleeps more than most other people during day and/or night (describe): ________________</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>78. Has trouble making decisions</td>
<td>0</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>79. Speech problem (describe): ________________</td>
<td>0</td>
</tr>
</tbody>
</table>

Please be sure you have answered all items. Underline any you are concerned about.
### Section B – continued

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Version 2.01 November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.</td>
<td>Dislikes staying in one place for very long</td>
<td>114.</td>
</tr>
<tr>
<td>100.</td>
<td>Has trouble sleeping (describe):</td>
<td>115.</td>
</tr>
<tr>
<td>101.</td>
<td>Stays away from job even when not sick and not on vacation</td>
<td>116.</td>
</tr>
<tr>
<td>102.</td>
<td>Underactive, slow moving, or lacks energy</td>
<td>117.</td>
</tr>
<tr>
<td>103.</td>
<td>Unhappy, sad, or depressed</td>
<td>118.</td>
</tr>
<tr>
<td>104.</td>
<td>Is unusually loud</td>
<td>119.</td>
</tr>
<tr>
<td>105.</td>
<td>Is disorganized</td>
<td>120.</td>
</tr>
<tr>
<td>106.</td>
<td>Tries to be fair to others</td>
<td>121.</td>
</tr>
<tr>
<td>107.</td>
<td>Feels he/she can’t succeed</td>
<td>122.</td>
</tr>
<tr>
<td>108.</td>
<td>Tends to lose things</td>
<td>123.</td>
</tr>
<tr>
<td>109.</td>
<td>Likes to try new things</td>
<td>124.</td>
</tr>
<tr>
<td>110.</td>
<td>Makes good decisions</td>
<td>125.</td>
</tr>
<tr>
<td>111.</td>
<td>Withdrawn, doesn’t get involved with others</td>
<td>126.</td>
</tr>
<tr>
<td>112.</td>
<td>Worries</td>
<td>113.</td>
</tr>
</tbody>
</table>

**PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNS ABOUT.**
Section C

Instructions: Read each statement and decide how well it describes your child. Mark your answer by circling either 0, 1, or 2 for each statement. Do not leave any statement unrated.

<table>
<thead>
<tr>
<th>Statement</th>
<th>0 = Not at all true</th>
<th>1 = Sometimes true</th>
<th>2 = Definitely true</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your child…</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1. Blames others for his/her mistakes.</td>
<td>0 1 2</td>
<td></td>
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</tr>
<tr>
<td>2. Engages in illegal activities.</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is concerned about how well he/she does at school/work.</td>
<td>0 1 2</td>
<td></td>
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</tr>
<tr>
<td>4. Acts without thinking of the consequences.</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. His/her emotions seem shallow and not genuine.</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lies easily and skillfully.</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Is good at keeping promises.</td>
<td>0 1 2</td>
<td></td>
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<tr>
<td>8. Brags excessively about his/her abilities, accomplishments, or possessions.</td>
<td>0 1 2</td>
<td></td>
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<tr>
<td>9. Gets bored easily.</td>
<td>0 1 2</td>
<td></td>
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<tr>
<td>10. Uses or “cons” other people to get what he/she wants.</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>11. Teases or makes fun of other people.</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>12. Feels bad or guilty when he/she does something wrong.</td>
<td>0 1 2</td>
<td></td>
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</tr>
<tr>
<td>13. Engages in risky or dangerous activities.</td>
<td>0 1 2</td>
<td></td>
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<tr>
<td>14. Can be charming at times, but in ways that seem insincere or superficial.</td>
<td>0 1 2</td>
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<tr>
<td>15. Becomes angry when corrected or punished.</td>
<td>0 1 2</td>
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<tr>
<td>16. Seems to think that he/she is better or more important than other people.</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>17. Does not plan ahead or leaves things to the “last minute”.</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>18. Is concerned about the feelings of others.</td>
<td>0 1 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Does not show feelings or emotions.</td>
<td>0 1 2</td>
<td></td>
<td></td>
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<tr>
<td>20. Keeps the same friends.</td>
<td>0 1 2</td>
<td></td>
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</tbody>
</table>
### Section D
Below are a number of common problems children have. Please rate each item according to your child’s behaviour in the last month. For each item, ask yourself, “How much of a problem has this been last month?” and circle the best answer for each one.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Not true at all (Never, seldom)</td>
<td>1</td>
<td>Just a little true (Occasionally)</td>
</tr>
<tr>
<td>1. Inattentive, easily distracted</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. Angry and resentful</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Difficulty doing or completing homework</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Is always “on the go” or acts as if driven by a motor</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Short attention span</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. Argues with adults</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. Fidgets with hands or feet or squirms in seat</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. Fails to complete assignments</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Hard to control in malls or while grocery shopping</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. Messy or disorganized at home or school</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. Loses temper</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. Needs close supervision to get through assignments</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. Only attends if it is something he/she is very interested in</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. Runs about or climbs excessively in situations where it is inappropriate</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. Distractibility or attention span a problem</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. Irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. Avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained mental effort (such as schoolwork or homework)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18. Restless in the “squirmy” sense</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19. Gets distracted when given instructions to do something</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20. Actively defies or refuses to comply with adults’ requests</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21. Has trouble concentrating in class</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22. Has difficulty waiting in lines or awaiting turn in games or group situations</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23. Leaves seat in classroom or in other situations in which remaining seated is expected</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>24. Deliberately does things that annoy people</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>25. Does not follow through on instructions and fails to finish schoolwork, chores or duties in the workplace (not due to oppositional behaviour or failure to understand instructions)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>26. Has difficulty playing or engaging in leisure activities quietly</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27. Easily frustrated in efforts</td>
<td>0</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>
Section E

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that you may have done when you had a disagreement with your spouse.

1 = Once    2 = Twice    3 = Sometimes    4 = Frequently    5 = Most of the time    0 = Never

How often would you (please circle):

a. discuss an issue calmly
   1  2  3  4  5  0
b. get information to back up your side of things
   1  2  3  4  5  0
c. bring in or try to bring in someone to help settle things
   1  2  3  4  5  0
d. insult or swear at him/her
   1  2  3  4  5  0
e. sulk and/or refuse to talk about it
   1  2  3  4  5  0
f. stomp out of the room or house
   1  2  3  4  5  0
g. cry
   1  2  3  4  5  0
h. do or say something to spite him/her
   1  2  3  4  5  0
i. threaten to hit or throw something at him/her
   1  2  3  4  5  0
j. throw, smash, hit or kick something
   1  2  3  4  5  0
k. throw something at him/her
   1  2  3  4  5  0
l. push, grab, or shove him/her
   1  2  3  4  5  0
m. slap or spank him/her
   1  2  3  4  5  0
n. kick, bite, or hit him/her with a fist
   1  2  3  4  5  0
o. hit or try to hit him/her with something
   1  2  3  4  5  0
p. beat him/her up
   1  2  3  4  5  0
q. burn or scald him/her
   1  2  3  4  5  0
r. choke him/her
   1  2  3  4  5  0
s. threaten him/her with a knife or gun
   1  2  3  4  5  0
t. use a knife or gun
   1  2  3  4  5  0
Section F

No matter how well families get along, there are times when people disagree about decisions, get annoyed about something another person does, or have disagreements or fights because they’re in a bad mood or for some other reason. People use different ways of trying to settle differences.

Here is a list of some of the things that your spouse may have done to you when you had a disagreement. For each one, how often would they do this?

1 = Once   2 = Twice   3 = Sometimes   4 = Frequently   5 = Most of the time   0 = Never

How often would he/she (please circle):

a. discuss an issue calmly
   1  2  3  4  5  0
b. get information to back up their side of things
   1  2  3  4  5  0
c. bring in or try to bring in someone to help settle things
   1  2  3  4  5  0
d. insult or swear at you
   1  2  3  4  5  0
e. sulk and/or refuse to talk about it
   1  2  3  4  5  0
f. stomp out of the room or house
   1  2  3  4  5  0
g. cry
   1  2  3  4  5  0
h. do or say something to spite you
   1  2  3  4  5  0
i. threaten to hit or throw something at you
   1  2  3  4  5  0
j. throw, smash, hit or kick something
   1  2  3  4  5  0
k. throw something at you
   1  2  3  4  5  0
l. push, grab, or shove you
   1  2  3  4  5  0
m. slap or spank you
   1  2  3  4  5  0
n. kick, bite, or hit you with a fist
   1  2  3  4  5  0
o. hit you or try to hit you with something
   1  2  3  4  5  0
p. beat you up
   1  2  3  4  5  0
q. choke you
   1  2  3  4  5  0
r. burn or scald you
   1  2  3  4  5  0
s. threaten you with a knife or gun
   1  2  3  4  5  0
t. use a knife or gun
   1  2  3  4  5  0