Improving thinking skills in young people in custody with mental health conditions using social cognitive and neurocognitive remediation therapy: A pilot study.

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Thesis Abstract

Background: Young people coming into custody often have poor educational attainment and have experienced unstable housing, mental health concerns, substance misuse and limited family support. These barriers can affect the development of learning, thinking and social skills. This in turn has a negative impact on making healthy life choices and accessing better job and social development opportunities. The research team have developed a targeted, culturally aware program (the School-Link Advantage (SLA) treatment program) that uses Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) to address cognitive deficits, enhance skill development and improve functioning across vocational and social domains. The feasibility and acceptability of using this combined CRT and SCRT treatment program for young people in custodial settings has been tested through the SLA pilot study.

Methods: Young people aged 16 to 21 years were recruited to 20 group treatment sessions over 10 weeks. The results are drawn from pre- and post-treatment standardised measures and an evaluation survey. Analysis examined the feasibility of referrals, retention of participants and acceptability of the treatments.

Results: The feasibility and acceptability of the program showed encouraging positive outcomes. Improvements were found in cognitive domains, working memory, emotional control and planning and organising. Feedback from participants was strongly positive and indicates the potential for development of skills in their everyday life.

Conclusion: Young offenders face significant barriers in returning to the community and establishing an independent life when released from custody. The young people participating in the pilot study were assessed as displaying positive cognitive gains. It is anticipated these

skills will help to prevent further mental health deterioration and enhance development of life skills.

Statement of originality

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

Information and data from this pilot study was collected by directly communicating with participants following written informed consent. In accordance with the Declaration of Helsinki, ethical approval was obtained from the Human Research Ethics Committee of the Justice Health and Forensic Mental Health Network (Reference 2019/EH13827), the Aboriginal Health and Medical Research Council Ethics Committee (Reference 1629/20) and the Youth Justice NSW Research and Evaluation Steering Committee (Reference D20/313) in late 2020.

The pilot study received funding from the Health and Education Training Institute (HETI) Mental Health Research Award for 0.5FTE of the Justice Health NSW School-Link Coordinator position from October 2020 to October 2021. In addition, MH–Children and Young People (MH-CYP) from the NSW Ministry of Health agreed to fund and source five iPads for participants to use during treatment sessions.

Date: 29.02.2024

Signature:

Rene Jones

Co-author declaration

We, the undersigned, declare the following statement:

This thesis principally represents the work of Rene Jones. Professor Anthony Harris, Dr Peter Malouf, Dr Daniel Talbot, and Dr Richard Baker provided considerable support in conceptualising the research, all the empirical studies and in the preparation of the introduction, study protocol, qualitative and quantitative results and discussion chapters of this thesis, as well as in the research study design.

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We are also grateful to the creators and developers of the Neuropsychological Educational Approach to Remediation (NEAR) program, including MindPowers and Social Cognition Interaction Training (SCIT). These treatment manuals have been instrumental in shaping the foundation of our treatment program. Their contribution to the fields of neuropsychological education and social cognition training has provided us with the essential framework and methodologies for the development and implementation of effective treatment strategies.

Lastly, I personally would like to express my gratitude to team members Ms Jeanne Wang, Ms Michelle Kightley and Ms Malisha Perera, for providing invaluable input and edits and ensuring the treatment manual's efficacy.

Signed

Rene Jones, Principal Investigator

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List of abbreviations

ACEs	Adverse childhood experiences
ADHD	Attention-Deficit Hyperactivity Disorder
BRIEF	Behaviour Rating Inventory of Executive Functioning
CBT	Cognitive Behaviour Therapy
CGI	Clinical Global Impression
CI	Confidence Interval
CRT	Cognitive Remediation Therapy
DBT	Dialectical Behaviour Therapy
DR	Delay Recall
ER-40	Penn Emotion Recognition Task
FASD	Foetal Alcohol Spectrum Disorder
Global EC	Global Executive Composite
GLM	Good Lives Model
HT	Hinting Task
IR	Immediate Recall
PSP	Personal and Social Performance Scale
PTSD	Post-Traumatic Stress Disorder
RCFT	Rey Complex Figure Test and Recognition Trial
RNR	Risk-Need-Responsibility
RT	Recognition Trial
SCRT	Social Cognition Remediation Therapy
SLA	School-Link Advantage
SD	Standard Deviation
ToM	Theory of Mind
YJ NSW	Youth Justice NSW
YJC	Youth Justice Centre
YPICHS	Young People in Custody Health Survey

Impact of COVID-19 pandemic

The biggest unanticipated issue impacting on this research study has been COVID-19. Due to COVID-19 restrictions the second treatment group was ceased because the participants were being released from custody before the program could gain access. Similarly, groups three and four were paused at various times throughout the treatment program due to COVID-19 restrictions, however the participants remained engaged.

CHAPTER ONE: Background

Introduction

This chapter is a narrative review of the literature exploring the circumstances and challenges faced by young people in contact with the criminal justice system as well as the treatment programs available in relation to their mental health issues. Specifically, this review examines the drivers and influences affecting the criminal behaviour of young offenders such as the mental health and neurocognitive problems experienced by this group, and existing and potential treatment programs for this cohort. The purpose the review is to inform the development of a targeted treatment program (the School-Link Advantage (SLA) treatment program) to improve mental health and neurodevelopmental outcomes for young offenders.

Note: Some of the material presented in this general introduction has also been included in subsequent chapters which were written for submission to scientific journals.

The issue of youth offending – an Australian perspective

Worldwide there are growing efforts to deter young individuals (aged 10-21years) from entering and continuing to have contact with the criminal justice system (Marr et al., 2023). Despite these efforts, across Australia on average there are over 819 young offenders residing in youth custody settings on a daily basis (Australian Institute of Health & Welfare, 2022; Hamilton et al., 2019). In Australia, the 2015 Young People in Custody Health Survey (YPICHS) found that the primary reasons for initiating offending behaviour were linked to friends and peers (52%), seeking positive emotions or alleviating boredom or anger (25.3%), alcohol or drug use (25.3%) and seeking financial gain or material possessions (22%) (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). The 2015 YPICHS also reported the most prevalent offences were purchasing illegal drugs (89.1%) and breaking into premises to steal (77.2%).

In Australian youth custody, Aboriginal young people are 16 to 20 times more likely to be incarcerated than young people of non-indigenous backgrounds, varying by geographical location (Haysom et al., 2023). Additionally, young offenders are significantly more likely to suffer from mental illness, with a staggering 40 times overrepresentation for youths in contact with the criminal justice system dealing with serious mental illness compared to young people in the general population.

Increase in violent youth offences

Despite a decrease in convictions worldwide for youth crime (Australian Institute of Health & Welfare, 2022; Day, 2021; Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017; Lambie & Randell, 2013; Lin et al., 2020; Umbach et al., 2018; Young et al., 2017), there is an increased frequency of violent youth offences (Derbyshire et al., 2019; Owen & Fox, 2011; Young et al., 2017). In Australia, the 2015 YPICHS revealed that 66.7% of young offenders had previously engaged in a physical fight and one-third had

participated in four or more fights prior to custody. Furthermore, one-third of young male offenders involved in recent fights reported a connection with a gang (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017).

Although youth crime has decreased by 36% with a matching 22% decline in young people entering the Australian criminal justice system over the past decade (Lin et al., 2020), there has been a concerning 75% rise in youth violent offences in urban areas between 2000 and 2010 (Young et al., 2017).

Reoffending behaviour

For young offenders, reoffending is also a serious issue, with rates of reoffending estimated to be as high as 70% (Derbyshire et al., 2019). A study in the United States and in Australia found over 50% of detained youths were re-arrested within 18-months after leaving custody, with almost 60% of those returning to youth justice courts before they turned 18 (Ikonomopoulos et al., 2015; Indig et al., 2016). In New South Wales, the 2015 YPICHS findings revealed that a majority of young offenders (83%) had prior experience of being in youth custody. On average they had been in custody 5.3 times, entering for the first time at an average age of 15 years. It has been argued that offending behaviour is more present in adolescence and is likely to drop off in adulthood (Ringland et al., 2016). However, research has also suggested that potentially 25% of young offenders reoffend into adulthood (Himelstein et al., 2012) and more recent data suggests this level has increased to 57% (Ringland et al., 2016).

Age of criminal responsibility. Australia has one of the lowest minimum ages of criminal responsibility which is set at 10 years of age (Haysom et al., 2023). However, there is a presumption against responsibility until age 14 years through the principle of *doli incapax* (Cunneen et al., 2016). There is a push for the age of criminal responsibility in

Australia to be raised to 14 years, which aligns with a more responsive and rehabilitative approach (Haysom, 2022). The United Nations Convention on the Rights of the Child (article 40) recommends raising the minimum age of criminal responsibility to at least 14 years (Haysom, 2022; Lambie & Randell, 2013).

Recently, there has been a movement towards a "child-first" model of youth justice, which takes a positive approach to rehabilitation rather than a negative focus on risk and punishment (Day, 2022). This approach prioritises a holistic, individualised and tailored response to children's welfare needs centred on strength and future aspirations (Day, 2022; Gagnon et al., 2022). This more positive model recognises that children in conflict with the law should be viewed as "children first" before all else, and advocates against labeling, accountability, and criminalisation (Day, 2022; Lin et al., 2020).

Background factors influencing young offenders

Issues for Aboriginal and Torres Strait Islanders. A major concern in relation to youth crime in Australia is the over-representation of Aboriginal and Torres Strait Islanders in youth custody (Hamilton et al., 2019; Haysom et al., 2023; Indig et al., 2016; Liddell et al., 2017; Malvaso et al., 2022). In 2022, incarcerated young Aboriginals made up 54% of the total youths in custody despite being only 3.8% of the total population in general (Australian Institute of Health & Welfare, 2022; Hamilton et al., 2019). Studies have shown that young people aged from 10-17 years from an Aboriginal background are 20 times more likely to be incarcerated than their non-aboriginal peers (Australian Institute of Health & Welfare, 2022; Bower et al., 2018; Cunneen et al., 2016). Data on youths in custody shows that 92% of Aboriginal young people experienced one or more psychological disorders, and 20% had an intellectual disability (Cunneen et al., 2016).

Aboriginal Australians also experience higher rates of neurodevelopmental and intellectual disorders compared to non-aboriginal individuals in custody (Hamilton et al.,

2019). The mortality rate among Aboriginal and Torres Strait Islander youths due to suicide is five times that of their non-Aboriginal peers in the general population (Gupta et al., 2020).

Family disruption. Young offenders commonly face family disruptions, with 57% experiencing parental separation or divorce. Parental incarceration is also a significant factor contributing to offending behaviour, with 53.6% of the young offenders in New South Wales youth custody reporting parental incarceration in the 2015 YPICHS (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017).

A significant proportion of young offenders have been placed in out-of-home-care in New South Wales (Ringland et al., 2016). Those who have been involved in child protection services are nine times more likely to be under youth justice supervision compared to the general population (Lin et al., 2020). The 2015 YPICHS (Justice Health Forensic Mental Health Network and Juvenile Justice NSW (2017) found that 21.1% of young offenders had been in out-of-home-care before turning 16, with 38.1% of that group having been placed in care three or more times. An Australian study conducted by Stewart et al. (2008) explored whether the timing of maltreatment had an influence on offending behaviour. For example, children experiencing maltreatment into adolescence were more likely to engage in young offending behaviour compared to those whose maltreatment occurred prior to adolescence. Additionally, a study by Baskin and Sommers (2011) showed that older youths placed in out-of-home-care face a greater likelihood of being arrested for both violent and non-violent crimes compared to younger youths.

Family disruption and/or insecure attachment, coupled with exposure to persistent stress, hinders young offenders' ability to process information and regulate their emotions (Haysom et al., 2023). This can result in a lack of a coherent sense of self and can also foster hostile misattribution bias, where the young person may perceive others as threatening

(Haysom et al., 2023). Disrupted early attachment adds to difficulties in self-regulation and may lead to mistrust and reluctance to seek help. These challenges, combined with cognitive impairments linked to mental illness, hinder the formation of trusting relationships and contribute to poor self-esteem and overall dissatisfaction with their wellbeing (Himelstein et al., 2012).

Education difficulties. Young offenders typically experienced a more fragmented education than their peers (Lambie & Randell, 2013). Many young offenders have experienced extended periods outside the educational system, and approximately 70% of young offenders had disengaged from education up to six months before entering custody (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017).

Many youth offenders had experienced high rates of impulsivity and were often diagnosed with attention-deficit hyperactivity disorder (ADHD) before entering custody (Himelstein et al., 2012; Penner et al., 2011). High levels of impulsivity often results in aggressive behaviour leading to fights, difficulties with schooling which manifests in low levels of literacy, poor behaviour, low self-esteem, and the increased risk of being excluded from mainstream schools (Haysom et al., 2023; Hodgkinson et al., 2021a; Hopkins et al., 2016). Such ADHD impairments can lead to poor motivation and lack of engagement with learning (Haysom et al., 2023; Marr et al., 2023; Papadopoulou et al., 2014).

ADHD, poor motivation and lack of school engagement contribute to poor social functioning (Haysom et al., 2023; Marr et al., 2023; Papadopoulou et al., 2014), and learning difficulties increase the potential of risk-taking and offending behaviours (Haysom et al., 2023; Hodgkinson et al., 2021a; Hopkins et al., 2016).

Socioeconomic disadvantage. Young offenders engaged in criminal behaviours often start from marginalised environments influenced by factors such as community violence,

social or cultural stigma, socioeconomic disadvantage, parental incarceration, homelessness, insecure food security, and limited access to health services (Borschmann et al., 2020; Cunneen et al., 2016; Stathis et al., 2013). Socioeconomically disadvantaged individuals are more likely to experience limited access to services and treatment, compared to those in higher socioeconomic brackets (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017; Mirowsky, 2017). Children from economically disadvantaged families are also more likely to experience ADHD, conduct disorders and anxiety disorders (Goodsell et al., 2017). The presence of mental health disorders, disengagement from school and socioeconomic disadvantage have a multiplying effect, leading to further negative impacts. For vulnerable young offenders, these challenges increase the risk of perpetuating the cycle of reoffending (Mirowsky, 2017).

Access to treatment. Young offenders have been shown to experience difficulties achieving equitable access to similar health services compared to the general population (Borschmann et al., 2020; Gupta et al., 2020; Malvaso et al., 2022; Quinn & Shera, 2009; Stewart et al., 2023; Tadros, 2021). This was also true for accessing and receiving treatment from community child and adolescent mental health services (Kinner et al., 2014; Singh et al., 2017; Stathis et al., 2013). Accessing healthcare and treatment may be difficult for young offenders because of their reduced health literacy (Gill et al., 2023; Gupta et al., 2020; Usher et al., 2019), due to the stigma of accessing services (Sapiro & Ward, 2020; Singh et al., 2017), because of the restrictive setting in custody (Penner et al., 2011) and often due to returning to tumultuous and challenging home settings (Singh et al., 2017).

When young offenders return to the community, they often encounter challenges such as homelessness, not understanding information about available support or being unable to access this, as well as having limited family and financial support (Stathis et al., 2013). The 2015 YPICHS found about 10% of young offenders may struggle to find suitable

accommodation after release from custody (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). Also, once released from custody, young offenders may choose to decline follow-up support offered in the community (Stathis et al., 2013). All these challenges limit young offenders' ability to access appropriate healthcare and this directly affects their overall wellbeing (Sapiro & Ward, 2020; Singh et al., 2017).

Impact of adverse childhood experiences. Adverse childhood experiences (ACEs) include experiences such as physical and emotional abuse, neglect, family violence, parental separation, or the death of a family member (Malvaso et al., 2022). Research conducted in 13 countries since 2000 has shown that a significant majority (87%) of young offenders experienced at least one event considered to be potentially traumatic (Gagnon et al., 2022; Malvaso et al., 2022). In the 2015 YPICHS, a significant proportion (68.2%) of young offenders reported having encountered at least one form of childhood abuse or neglect, and 28.1% reported experiencing severe forms of abuse or neglect (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). Malvaso et al. (2022) found that 97% of young offenders experienced at least one ACE, with 77% reporting four or more ACEs in South Australia.

ACEs have an impact on biological, psychological and social development (Baetz et al., 2021; Haysom et al., 2023; Malvaso et al., 2022; Stewart et al., 2023), such as developing maladaptive coping strategies, low self-esteem, poor social functioning and suffering a recurrence of a mental illness later in life (de Beer et al., 2022; Owen & Fox, 2011). ACEs and trauma symptoms can alter a young individual's capabilities in relation to cognition, emotion, and behavioural reactions (de Beer et al., 2022; Hodgkinson et al., 2021a). This can result in mental health issues, substance abuse, disengaging from services and an increased risk of recidivism (Malvaso et al., 2022; Quinn & Shera, 2009).

Health issues. Young offenders face multiple health needs including health issues based on enduring disadvantage (Borschmann et al., 2020) and lower intellectual capacity (Mirowsky, 2017). The 2015 YPICHS revealed that 25% of young offenders had experienced loss of consciousness due to a head injury in the past and 50% of these injuries had been caused by an assault, generally from family members, leading to ongoing health difficulties, such as poor concentration (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017).

Borschmann et al. (2020) found that Australian youths in custody have higher rates of sexually transmitted infections (STIs) than young people in the general population, including Syphilis 3%, Hepatitis B virus 0-4%, and Hepatitis C virus 9-10.8%. Additionally, data from the 2015 YPICHS revealed that one in ten young people in custody received a diagnosis of STI, with chlamydia being the most common at 9.6% (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). The YPICHS data also revealed that 92% of young offenders were sexually active before the age of 16 and only one in four used protection, such as condoms.

Mental health issues. Young offenders have high rates of mental health disorders, ranging from 70% to 90% (Gagnon et al., 2022; Stewart et al., 2023; Tadros, 2021; Usher et al., 2019). Australian young offenders also show an elevated prevalence of mental health disorders compared to their peers who do not offend – see Table 1 below (Gaskin et al., 2022; Gill et al., 2023; Singh et al., 2017; Stathis et al., 2013; Young et al., 2017). As illustrated in Table 1, Borschmann et al. (2020) conducted a comprehensive review of global evidence concerning the prevalence of mental disorders among young offenders in the criminal justice system from 1980 to 2018. This study analysed 90 publications on mental health disorders. Many young offenders are diagnosed for the first time with a mental health disorder once they are in custody (Borschmann et al., 2020; Ikonomopoulos et al., 2015; Singh et al., 2017).

Table 1

Comparison of prevalence of mental disorders among young people in the general population with young offenders in custody in NSW and internationally.

Mental illness	NSW Young Minds Matter Survey (2013-14) [2]	International prevalence in young individuals from studies dated 1980 -2018 [3]	NSW Young People in Custody Health Survey (YPICHS, 2015)[1]	International prevalence in young offenders from selected studies dated 1980 -2018 [3]
Conduct disorder	2.1%	2.1%	59%	13.9-100%
ADHD	7.4%	3-9%	30%	2-50%
Anxiety disorder	6.9%	6.5%	32%	9-56.3%
Major depression disorder	2.8%	14.3%	17%	4.7-40.4%

Source: 1. 2015 YPICHS (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017) , 2.Young Mind Matters Survey (Goodsell et al., 2017) and 3.The health of adolescents in detention: a global scoping review (Borschmann et al., 2020).

The 2015 YPICHS found that 89% of young people in custody in New South Wales reported experiencing at least one mental health disorder (Haysom et al., 2023; Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). Post-traumatic stress disorder (PTSD) was one of the most common diagnoses, ADHD was three times more prevalent than in the general population (6.3%) and conduct disorder was 20 times more prevalent in young offenders (45.3%) (Haysom et al., 2023; Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). Young individuals with ADHD were more at risk of being in contact with criminal justice system before the age of 14 years (Indig et al., 2016). Internationally the prevalence of psychotic disorders ranged from 0.8% to 2.0% among young male offenders, whereas for young females offenders it was 1.0% to 9.0% (Borschmann et al., 2020). The 2015 YPICHS findings showed a prevalence rate for psychotic disorders of 4.2% among young offenders in NSW custodial settings.

There is a complex connection between offending and mental illness (Borschmann et al., 2020; Malvaso et al., 2022; Rowlands et al., 2020; Underwood & Washington, 2016), however, it is clear that the rates of mental illness are high among young offenders (Singh et al., 2017; Young et al., 2017) and that this is a significant issue facing many young offenders. A strong association has been shown to exist between a diagnosis of ADHD and recurrent involvement in criminal activities (Indig et al., 2016). While not recognised directly as mental health issues, other related health factors that show a strong association with offending behaviour include illicit drug use and alcohol misuse (Indig et al., 2016; Marr et al., 2023). Whether or not there is a causal link between mental health challenges and these behaviours, understanding the connection for youth offenders is vital for developing effective treatments for this cohort (Underwood & Washington, 2016).

Mortality rates. A disturbing finding in Australia is that young offenders who have been in custody experience higher mortality rates (i.e., five to 41 times higher) than the general population (Borschmann et al., 2020; Haysom, 2022; Kinner et al., 2014). Coffey et al. (2003) followed incarcerated youths over 12 years and found that young male offenders were nine times more likely to die than young people in the general population, and for young female offenders the rate was significantly higher at 41 times that of the general population. The most common causes were drug overdose, suicide, accidental injuries and violence (Borschmann et al., 2020). Borschmann et al. (2020) reported that while suicide represents a small portion (<1%) of overall mortality risk among detained adolescents, their risk of suicide after release is estimated to be two to nine times higher compared to peers in the general community of similar age and gender.

Substance use disorder and alcohol misuse. Research shows that young offenders experienced poor outcomes with their physical and mental health, culminating in higher mortality rates and a higher likelihood of misusing alcohol and illicit drugs (Cunneen et al.,

2016; Day, 2022; Hamilton et al., 2019; Haysom et al., 2023). A comprehensive global review revealed a range in the prevalence of substance use disorder from 22% - 96% for young offenders compared to young individuals in the general population reporting at 7% - 11% (Borschmann et al., 2020). An Australian study examining reoffending behaviours showed that young individuals who were heavy drinkers were seven times more likely to have been incarcerated than non-drinkers in the general population (Indig et al., 2016). The 2015 YPICHS findings revealed that 41.8% of youths in custody had a weekly experience of being drunk, and 51.6% acknowledged that their issues with alcohol had led to problems with their friendships, education, health, interactions with the police and/or relationships with their parents (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017).

Neurodevelopmental disabilities. Young individuals with neurodevelopmental disabilities, such as ADHD, communication impairments, foetal alcohol spectrum disorder (FASD), learning disabilities and traumatic brain injury are at an elevated risk of involvement in criminal activities (Borschmann et al., 2020; Nkoana et al., 2020). Borschmann et al. (2020) conducted a global review of 58 publications which showed the prevalence of learning disorders for young offenders varied from 10% -32%, surpassing the 2% - 4% rates observed in the broader population (Borschmann et al., 2020; Nkoana et al., 2020). Impairments in language and communication often go unnoticed in young offenders (Anderson et al., 2016; Nkoana et al., 2020), due to disruptive behavioural problems frequently overshadowing these issues (Nkoana et al., 2020). Communication impairments showed a prevalence rate ranging from 2% - 50% among young offenders in custody compared to levels of 3% - 9% for young people in the general population (Borschmann et al., 2020). Borschmann et al. (2020) found FASD was prevalent in 11% - 21% of young offenders from four Canadian studies, compared to 2% - 5% in the general populations of high-income countries. However, an Australian study in 2018 reported a higher prevalence of FASD at 36% (Borschmann et al., 2020; Bower

et al., 2018; Hamilton et al., 2019). Williams et al. (2015) conducted a systematic review of traumatic brain injury among young offenders, reporting a prevalence of 32% - 50% who had lost consciousness in childhood, compared to 5% - 24% for the general population. This is consistent with the results of the 2015 YPICHS in New South Wales, that reported 21.8 % of young offenders had experienced traumatic brain injury (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017).

Researchers, Bower et al. (2018) conducted a feasibility study to assess prevalence of FASD within an Australian youth detention centre and identified that approximately 89% of young offenders showed at least one severe neurodevelopmental impairment. In the study severe impairments were found in young offenders' attention (72%), executive functioning (78%), communication (69%) and working memory (56%). Additionally, 24% of young offenders had an IQ score at or below 70. The occurrence of neurodevelopmental impairment in this study was three times higher than the 31% reported in another FASD study for youths in custody (Bower et al., 2018).

Impact of cognitive impairment. Cognitive impairment is closely linked to increased recidivism, particularly among first-time male offenders with conduct disorder (Lambie & Randell, 2013; Rowlands et al., 2020). The 2015 YPICHS identified a potential 6.2% prevalence of intellectual disability among young offenders (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). A higher occurrence of intellectual disability and borderline cognitive functioning has been observed among young offenders (Indig et al., 2016; Umbach et al., 2018). However, a Swedish study found a lower prevalence rate of 0.5% - 1.5% for intellectual disability in young offenders that is similar to the prevalence rate in the general population (Wallinius et al., 2019).

Individuals with cognitive impairments experience difficulty directing attention, shifting between tasks, monitoring errors, controlling inhibition, making decisions and adjusting to stress (Rowlands et al., 2020) They tend to exhibit heightened callous-unemotional and conduct disorder traits, making them more prone to engaging in violent criminal behaviours (Rowlands et al., 2020; Wallinius et al., 2019). They also exhibit underlying impulsiveness traits, rushing to solve problems without much thought (Rowlands et al., 2020; Williams et al., 2015). Cognitive impairment has an impact on how well individuals can handle daily tasks and interact with others, which has a flow-on effect on social relationships (Harris et al., 2022; Williams et al., 2015).

Impact of social impairment. Young offenders commonly exhibit social cognitive impairments, including difficulties recognising emotions and understanding how their thinking patterns work (theory of mind (ToM)), leading to challenges in their social functioning and interpersonal relationships (Turner-Brown et al., 2008). Samper et al. (2021) explored the influence of parenting styles, emotional stability, and prosocial reasoning on prosocial behaviour in Spanish youth offenders compared to the general youth population. They found that empathic concern and perspective taking were significantly impaired in young offenders, correlating with poor prosocial behaviour.

Mental illness is associated with significant impairment in social cognitive functioning (Dubreucq et al., 2020; Hajri et al., 2022; Turner-Brown et al., 2008). Green et al. (2019) investigated social cognitive deficits in individuals with schizophrenia, revealing impairments in emotional processing (d=0.89), mentalizing (d=0.96), and social perception (d=1.04). Additionally, cognitive impairments such as these are often associated with neurodevelopmental and mental health disorders, affecting the ability to identify emotions in others and interpret verbal and non-verbal communication (Demily et al., 2016; Williams et al., 2015). In custody, such impairments manifest in difficulty following rules, a propensity

for engaging in fights, and in not being able to communicate effectively in social contexts (Nkoana et al., 2020).

Enhancing the skill of recognising anger signs could potentially decrease instances of misunderstanding others' emotions (Hubble et al., 2015). Additionally, a lack of fundamental literacy, vocational and social skills (Lambie & Randell, 2013) compounds cognitive challenges, further hindering young offenders' capacity to manage their emotions effectively (Himelstein et al., 2012; van der Stouwe et al., 2016).

Maturation difficulties. Young offenders have often been shown to experience delays in cognitive development, impacting their emotional regulation and decision-making abilities (Hein et al., 2020; Hodgkinson et al., 2021a; Williams et al., 2015). This hinders cruical developmental milestones (Simpson et al., 2018) and contributes to them engaging in offending behaviour (Borschmann et al., 2020; Bower et al., 2018). Moreover, neurocognitive and social cognitive deficits delay maturation, and this disavantages young offenders when they reintegrate into the community (Hajri et al., 2022; Himelstein et al., 2012; Kim et al., 2018; Penner et al., 2011; Wallinius et al., 2019).

Key neurocognitive and social cognitive skills such as attention, executive functioning, learning, memory, language, and ToM are essential for leading a fulfilling life (Kim et al., 2018; Williams et al., 2015). Untreated maturation difficulties increase the likelihood of reoffending behaviour and poor life outcomes (Borschmann et al., 2020; Farrington et al., 2012). Young offenders face unfavourable life trajectories if these cognitive and social deficits are not addressed (Danielson et al., 2021; Farrington et al., 2012; Simpson et al., 2018; Williams et al., 2015).

Addressing mental health challenges during adolescence can reduce long-term difficulties in adulthood (de Beer et al., 2022). Targeted interventions aimed at improving

cognitive and social cognitive impairments have shown promise in enhancing outcomes for individuals facing such challenges (Dark et al., 2018; Darmedru et al., 2017; Dubreucq et al., 2020; Hajri et al., 2022; Harris et al., 2022; van Duin et al., 2019; Vidarsdottir et al., 2019). Designing programs to improve decision making and social function can help young offenders reintegrate more effectively into society after incarceration (Rowlands et al., 2020).

Complexity of influences impacting youth criminal behaviour. Evidence suggests there is no single risk factor which predicts offending and reoffending behaviour (Derbyshire et al., 2019; Ringland et al., 2016). Rather, there are multiple contributing factors impacting young offenders, such as coming from a marginalised background, disengaging from school, and exhibiting risky behaviour, including sexual activity and substance misuse (Cunneen et al., 2016; Indig et al., 2016; Ringland et al., 2016; Singh et al., 2017). Young offenders struggle on many levels, for example, living in an unsafe community and/or home life, facing neglect, and dealing with emotional abuse (Stathis et al., 2013). These issues will usually impact the young offender's self-development and contribute to difficulties with cognition, social skills and poor self-esteem (Stathis et al., 2013).Although there is little research on this topic, exposure to trauma and mental health disorders, also common among youth offenders, have also been shown to have an association with persistent neurocognitive and social-cognitive impairment (Cotter et al., 2018; Couture et al., 2006; Kim et al., 2018; Mesholam-Gately et al., 2009). neurocognitive and social-cognitive functioning, compounded by ACEs, are proposed as underlying factors contributing to criminal behaviour (Wallinius et al., 2019).

Treatment for young offenders

Youth custody as a rehabilitation opportunity

While community settings are acknowledged as being more effective for mental illness recovery, there is a unique opportunity for mental health intervention to be provided in the youth custodial setting (Haysom et al., 2023). The 2015 YPICHS showed that access to

rehabilitative approaches and treatment programs was seen as crucial to a successful return to the community after being in custody (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017; Marr et al., 2023).

Although, youth custody provides an opportunity for marginalised young individuals to access health services, there are challenges for community based mental health services to accommodate this cohort (Gill et al., 2023). Treatments in the custodial setting can provide young offenders access to essential healthcare previously unavailable (Borschmann et al., 2020; Bower et al., 2018; Usher et al., 2019). Youth Justice NSW is responsible for managing young offenders with the Department of Education and Justice Health NSW. In 2003, the provision of healthcare in NSW youth custody was transferred from Youth Justice to Justice Health NSW (Singh et al., 2017), which has the responsibility for providing access for young offenders to the health treatment they require (Gill et al., 2023; Penner et al., 2011; Singh et al., 2017). This organisation follows a collaborative approach to addressing criminal justice issues, as well as physical and mental health needs within the youth justice system. However, there are challenges in providing a collaborative approach from all of the relevant care systems (Department of Education, NSW Mental Health, Department of Community and Justice) to effectively treat young offenders (Stathis et al., 2013; Underwood & Washington, 2016).

Within custodial environments, education, health care and welfare provisions are crucial for enhancing wellbeing among young offenders. (Hamilton et al., 2019). In New South Wales, the youth custodial system has the responsibility to give young offenders access to health support and resources to meet their educational, vocational, welfare, and psychological needs. However, little data is available in relation to levels of care provided in the practical application of these policies.

In some youth custody settings, young offenders face multiple obstacles in obtaining healthcare. This is due to limited resources, disjointed healthcare systems, and inadequate collaboration between services both internally and externally (Dickens et al., 2023). Agencies are likely to achieve much better outcomes for young offenders if they connect to share resources, conduct joint training sessions and collaborate on shared policies and procedures (Malvaso et al., 2022). A collaborative approach between mental health, education and vocational/employment services was seen as vital for the provision of appropriate health services for young offenders (Campbell et al., 2014; Gagnon et al., 2022; Lin et al., 2020; Malvaso et al., 2022; Stewart et al., 2023).

To provide effective treatment in custodial settings it was also seen as important to provide an environment focusing on personal growth and support, balancing the role between care and control (Dwyer & Oostermeijer, 2022; Quinn & Shera, 2009). Treatments conducted in a youth custodial centre with a positive environment showed higher motivation levels, reduced aggression, and reduced mental health presentations of young offenders (Dwyer & Oostermeijer, 2022). Facilitating treatments with this positive approach was seen as the first step in providing an effective intervention with improved outcomes and lower recidivism rates (Dwyer & Oostermeijer, 2022). Expanding the treatment intervention protocols to encompass a system that allows young offenders access to a safe and healing environment, rather than a regime of punishment and/or control conditions, has been shown to be beneficial (Baetz et al., 2021; Day, 2021; Dwyer & Oostermeijer, 2022; Gagnon et al., 2022). In New South Wales, Youth Justice NSW, in collaboration with Justice Health NSW, has undertaken to provide access to safe physical and mental wellbeing for all young offenders in custody under the *Model Charter of Rights for Children and young people detained* (Kilkelly & Pleysier, 2023).

Effective mental health interventions for young offenders

There is limited research available examining the effectiveness of mental health treatment programs for young offenders (Gagnon et al., 2022; Rowlands et al., 2020; Simpson et al., 2018) and research is also limited as to whether treatment in the restricted custodial setting is effective. Providing mental health treatment for young offenders in custody is a complex challenge, marked by high dropout rates and reoffending behaviours (O'Brien et al., 2016). Additionally, the determining who receives mental health treatment and the extent of treatment is often contentious (Hein et al., 2020; Penner et al., 2011).

The risk-need-responsibility (RNR) model, developed by Andrews et al. (1990), targets criminogenic risk factors, including antisocial personality patterns, pro-criminal attitudes, social supports for crime and history of antisocial behaviour. However, critics argue that this approach lacks the conceptual tools to effectively guide therapists and actively engage young offenders (Mallion et al., 2020; O'Brien et al., 2016; Ward et al., 2007). Alternatively, the "Good Lives Model" (GLM) places greater emphasis on non-criminogenic needs. It adopts a holistic, strength-based and therapeutic approach, focusing on purpose-filled lives to mitigate the risk of reoffending (Ward et al., 2007). Mallion et al. (2020), when examining recidivism rates after completion of GLM, found that offenders who included positive elements in their community reintegration plan ($p<0.06$) demonstrated better outcomes compared to those who did not.

Both GLM and RNR programs use cognitive behaviour therapy (CBT) or other similar techniques. CBT and other related behavioural treatments, such as dialectical behaviour therapy (DBT) and interpersonal skills training, have shown positive outcomes through group processes involving cohesiveness and expressiveness (Garrido & Morales, 2007; O'Brien et al., 2016; Yoon et al., 2017). O'Brien et al. (2016) examined psychological treatments used for offending populations and found that studies involving CBT, DBT and

interpersonal skills training often had a small sample size or lacked a control group. While CBT was seen as effective in reducing future reoffending for the adult population, it was seen as possibly requiring additional support to address the cognitive and emotional development needs of young offenders (Simpson et al., 2018; Underwood & Washington, 2016).

Traditional interventions used to for young people, such as CBT and family work, may not be sufficient to meet the many different needs of young offenders. This is because of the vulnerable nature of this cohort, coupled with the ineffectiveness of existing cognitive treatments which may not match the individual developmental needs of each young offender, such as speech and communication disorders (Malvaso et al., 2022). There is seen to be a need to develop more targeted therapeutic strategies, incorporating trauma-informed and developmentally appropriate tools, to cater for the unique needs of young offenders (Malvaso et al., 2022).

Interventions commonly address young offenders' criminogenic needs, aiming to reduce recidivism, while support for the mental health issues of this cohort tends to have a lower priority (Stewart et al., 2023). Research has shown that effective treatment should focus on building skills to match personal needs and improve overall wellbeing, rather than simply addressing risk factors (Dwyer & Oostermeijer, 2022; O'Brien et al., 2016; Stewart et al., 2023). Moving the focus from reducing the risk of reoffending behaviour to providing strategies to improve prosocial activities and lifestyle choices has the capacity to help reduce recidivism rates in the longer term (Javadi et al., 2019; O'Brien et al., 2016; Serie et al., 2023). Research has demonstrated a significant reduction in recidivism rates using a life skills group intervention (Tadros, 2021). Lancaster et al. (2011), conducted a psychoeducational life skills group intervention with young offenders in the community. A small to moderate positive effect was observed, with 60% of young offenders who underwent the intervention

avoiding reoffending over a 24-month period, compared to only 46% avoiding reoffending who did not receive the treatment. The group therapy approach has shown benefits in treatments for young offenders in custody, especially in programs focused on developing life skills (Tadros, 2021).

Therapeutic alliances and a trauma-informed approach were also seen as significant in supporting young offenders and ensuring a treatment program is well implemented (Vitopoulos et al., 2019). Both of these elements were shown to be fundamental for successful outcomes (Campbell et al., 2014; O'Brien et al., 2016). Integrated treatment approaches such as multisystemic therapy provided more targeted programs, but care was seen as necessary when adapting such therapies to a different setting, such as youth custody, as this may alter the program's effectiveness (Underwood & Washington, 2016).

Due to the vulnerabilities of young offenders, any treatment interventions need to be considered carefully and should incorporate a multidisciplinary approach, with programs individualised to address the specific challenges faced by young offenders in custody (Javadi et al., 2019; Koehler et al., 2013; O'Brien et al., 2016). Understanding the individuals' previous treatment history, education levels, social activities and work history have also been shown to help tailor a treatment program to address individual needs (Penadés et al., 2012). Unpacking how social risk factors operate within schools, communities, families and with peers, and understanding how these factors can lead young people to offend and end up in custody was also considered important (Pyle et al., 2020) in helping to identify what areas to target in treatment.

Challenges facing treatment programs implemented in youth custodial settings. The provision of effective treatment programs can be difficult in a youth custody setting (Hamilton et al., 2019). This environment is impacted by factors not in play in community

settings, such as the short time spent engaging, reduced access to young offenders and their families, and challenges relating to privacy and confidentiality (Haysom et al., 2023).

Identifiable challenges when conducting treatment programs within custodial settings include: obtaining consent (Trotter et al., 2017); dealing with external factors that disrupt access to treatment programs; conflict with other programs; limited staff to assist with running programs and moving young offenders; transfer of young offenders to other centres; and limits on the time spent in custody (Simpson et al., 2018). These challenges can make implementing treatment programs difficult and lead to issues such as retention difficulties and high dropout rates (Simpson et al., 2018).

Establishing a trauma-informed youth justice system is an important base for effective treatment programs due to the well-documented prevalence of childhood maltreatment (40% - 70%; (Coleman & Stewart, 2010; Moore et al., 2013)), cumulative adversity (77% - 95%; (Baglivio et al., 2014; Wilson et al., 2013)) and PTSD (11% - 67%; (Moore et al., 2013)) among the young offending population (Vitopoulos et al., 2019). The observed connection between maltreatment, criminogenic needs, and reoffending highlights the need to integrate a trauma-informed framework into all areas of treatment in custodial settings. Having a safe environment balanced with appropriate interventions provides a platform for young offenders to connect and engage (Ford & Blaustein, 2013).

Penner et al. (2011) discovered that the lack of sense of safety is a global issue in the provision of mental health treatment for young offenders in custody. Teplin et al. (2005) suggest that 25% - 30% of young offenders with mental health disorders receive treatment while in custody. This highlights the need for clear treatment guidelines and allocation of responsibilities for treatment (Penner et al., 2011; Underwood & Washington, 2016). While the supervised environment in custody was shown to benefit young offenders' specific needs,

there was a lack of continuity of care after release with limited access to services and problems encountered due to young offenders' behaviours (Campbell et al., 2014). Furthermore, it is often difficult to determine what the right treatment is and have a clear understanding of what is necessary for an effective intervention (Campbell et al., 2014; Stathis et al., 2013)

Limitations in research on existing treatment programs. Many of the studies reviewed did not report whether the treatment program for young offenders in youth custody had measurable success in helping improve individual functioning (Gagnon et al., 2022; Hein et al., 2020). Many studies did not address important methodological issues such as the use of psychometrically sound measures and treatment fidelity and some did not include a detailed description of the treatment implemented (Gagnon et al., 2022). Despite the diverse cultures and religious and ethnic backgrounds represented in youth custody, findings seldom discussed the cultural appropriateness of treatments (Hodgkinson et al., 2021a; Koehler et al., 2013). Information about cognitive functioning, despite its importance for young offenders, was seldom provided (Umbach et al., 2018). Due to the lack of information on effective treatment programs for female young offenders, investigating and tailoring interventions to include gender-specific treatment is also an important area for further research (Garrido & Morales, 2007). In Australia, given that Aboriginal young people are overrepresented in custody, the overall efficacy of treatment programs could benefit from further research in tailoring interventions to better meet the needs of Indigenous participants.

The review found that interventions tailored to the developmental and trauma-related needs of young offenders were often small-scale and used individualised treatments (Malvaso et al., 2022). For example, a systematic review by Rhoden et al. (2019) of trauma-informed interventions included 16 studies (of which 14 studies were qualitative) which, while promising, were limited by small size, bias risk and varied measures. Additionally, research

in custody settings often focused on addressing addiction, substance abuse, and physical health issues, such as diabetes (Rowlands et al., 2020). Further research is needed to assess the frequency, depth, and effectiveness of interventions, particularly those targeting the challenges faced by young offenders (Garrido & Morales, 2007; Jewell et al., 2015).

A particular area still needing investigation is how to address the cognition and social cognition needs of young offenders in rehabilitation programs to improve their self-regulation, interpersonal problem-solving, thinking and social skills (Javadi et al., 2019; Simpson et al., 2018). It would be beneficial if such studies prioritised independent evaluation and replication to enhance the robustness of the intervention, building greater confidence in the validity and generalisability of the findings (Chitsabesan & Hughes, 2016; Gagnon et al., 2022; Hodgkinson et al., 2021a).

Another significant gap in the literature was in relation to the application of mental health treatment practices in youth justice settings (Penner et al., 2011; Rowlands et al., 2020) in jurisdictions other than the United States where most of the research has been conducted to date (Penner et al., 2011).

Lastly, existing literature has focused on the youth-to-adult relationship with treatments conducted by adult support workers. This approach fails to capture the role of peer-to-peer relationships in helping young offenders (Sapiro & Ward, 2020). While young offenders are in the developmental phase of life they are actively seeking social bonds with their peers (Leader, 1991).

Addressing these gaps in future research would contribute to a more comprehensive understanding of effective treatment programs for young offenders and allow for the development of targeted, culturally sensitive, and evidence-based strategies that address social and cognitive deficits and promote better life outcomes for these individuals.

Important elements of treatment programs

Early intervention. Implementing early stage interventions focusing on cognitive and social cognitive impairments can be a catalyst for long-lasting positive changes for youths experiencing disruptive behaviour disorders (Dodge et al., 2015). Intervening during adolescence has the capacity to reduce functional impairment linked to mental health and neurodevelopmental disorders and thus foster improved life outcomes into adulthood (McGorry et al., 2011; Underwood & Washington, 2016; van Duin, 2019). This highlights the need to provide early treatment for young offenders who are more vulnerable to engaging in and pursuing criminal activities (Fitzpatrick et al., 2020; Gettinger et al., 2012).

Due to the complex issues facing young offenders, they need specialised and tailored treatments, rather than a one-size-fits-all approach (Gill et al., 2023). Treatments targeting cognitive and social development (Avenevoli et al., 2008; Borschmann et al., 2020; Dooley & Fitzgerald, 2012; Kessler et al., 2005) and providing a coordinated response and comprehensive supporting culture (Malvaso et al., 2022) are considered most beneficial.

Treatment program integrity. Treatment program integrity is best ensured by a fidelity process that confirms sessions follow a set procedure, and for example, capture changes to the program and measure participants' responsiveness (Gagnon et al., 2022). Recording information about the staff who carry out the program, having a clear record of training provided, measuring how well the treatment plan is followed, and capturing the effectiveness of the treatment program (Gagnon et al., 2022) are also important.

Level of responsiveness. One factor seen as important to consider prior to conducting a treatment program is to understand and match the participants' treatment readiness with the therapeutic objectives of the treatment program (O'Brien et al., 2016). This includes creating a treatment program to match the characteristics and needs of each participant, such as mental health and neurodevelopmental disorders or learning difficulties (Gagnon et al., 2022).

Minimising barriers to engagement has been shown to enhance involvement in the process, leading to more effective participation and better treatment outcomes (O'Brien et al., 2016).

Comprehensive assessments. The success of a treatment program relies on early assessment of issues prevalent in young offenders (Borschmann et al., 2020; Bower et al., 2018; Hamilton et al., 2019). Treating young offenders experiencing neurodevelopmental and mental health disorders requires processes to effectively screen and assess these conditions (Underwood & Washington, 2016). Thorough assessments, supported by personalised rehabilitation interventions, are seen as necessary to improve real-life functioning and enhance the quality of life for individuals (Penadés et al., 2012; Wykes, 2018). A comprehensive assessment would typically explore both cognitive and social impairments, including learning, educational, and mental health needs. Failure to fully understand these factors has consequences in identifying the complex needs of young offenders, impacting on their care during reintegration into communities (Hamilton et al., 2019). However, with targeted interventions and a holistic approach, there is potential to effectively address and treat cognitive and social deficits effectively, increasing the likelihood of a positive outcome for the rehabilitation and successful reintegration of young individuals into society (Rowlands et al., 2020).

Staff support. The success of treatment programs depends upon a holistic approach being adopted, with staff trained to understand the rationale behind treatment interventions and being empowered to reinforce treatment goals and the goals of the young offenders (Javadi et al., 2019; Serie et al., 2023). Strengthening staff capabilities enhances the skill development of young offenders (Baetz et al., 2021; Day, 2022; Javadi et al., 2019; Lin et al., 2020). For example, treatments were shown to work better when staff collaborated with participants in relation to their goals and plans, encouraged choice and gave them a voice (Cumming et al., 2018).

Custodial staff have been shown to influence the success of a treatment program if their approach is positive (Penner et al., 2011). Seeing custodial centres as a potential channel for instigating positive change for young offenders, rather than being viewed simply as an avenue for procedures or punishment, was seen as beneficial (Malvaso et al., 2022). Bower et al. (2018) suggest developing training materials to enhance the skills of staff to work with and care for young offenders with neurodevelopmental impairments.

Specifically in an Australian context, treatment for young offenders improved when more Aboriginal staff were employed, staff were trained in the identification of mental health concerns and how to engage young offenders, and relevant information about their treatment was shared (Hamilton et al., 2019). O'Brien et al. (2016) explored the staff-to-prisoner relationships and found that using trauma-informed practices, such as staff promoting positive regard and empathy, improved growth and resilience with individuals' mental health symptoms. Malvaso et al. (2022) and Vitopoulos et al. (2019) felt this approach could be used when working in a youth custodial setting specifically in relation to dealing with past ACEs. Resilience was also considered to be enhanced by shared experiences of hardship within a group as a means of and building strength for young offenders (Malvaso et al., 2022). It was also considered vital to incorporate appropriate staff training, engage facilitators who had worked in mental health treatment previously, and adopt trauma-informed practices before commencing a treatment program (Hamilton et al., 2019; Lin et al., 2020).

Family work. Samper et al. (2021) concluded that it was important to involve family and social support in treatment programs to promote adaptive behaviour, targeting young offenders' social cognitive development. The most successful therapeutic approaches proven to decrease criminal behaviour of young people with mental health conditions include functional family therapy (25% reduction in recidivism rate (Shelton, 2005)) and

multisystemic therapy (70% reduction in recidivism rate (National Mental Health Association, 2004). These methods share common features, involving both family and young offenders, operating in the community, and addressing problematic behaviours and stressors within the family unit as a whole (Underwood & Washington, 2016). Grisso (2008) reported these interventions were among the few to effectively reduce reoffending rates among young offenders experiencing mental health disorders. However, research on each model's efficiency is limited because of a small effect size and methodological weaknesses. Nevertheless, the primary challenge in treating young offenders with mental health issues seems to lie not in the availability of evidence-based treatment, but rather in determining the optimal methods and setting for delivering these treatments to achieve the best outcomes (Underwood & Washington, 2016).

Individual vs. group therapy. Yoon et al. (2017) conducted a systematic review of 37 randomised clinical trials of psychological treatments for mental illness within an incarceration setting. The trials focussed on the impact of mental health outcomes among incarcerated offenders and used a range of psychotherapeutic techniques. The study identified difficulties surrounding the setting and follow-up but observed a small to moderate effect for a range of psychological treatments including CBT and mindfulness. The findings did not see significant differences between the effectiveness of group and individual therapy (Yoon et al., 2017).

Despite this finding, group therapy would appear to offer young offenders the chance to practise interpersonal skills, explore issues relating to their impairments, and develop skills to manage conflict and communicate effectively (O'Brien et al., 2016). The limited literature available suggests group therapy may be a cost-effective and successful method for treating young offenders (O'Brien et al., 2016; Penner et al., 2011). In particular, group programs

focusing on psychosocial, guided and positive peer interactions, combined with methods that build capacity and interpersonal skills, have been applied successfully and are considered appropriate (Javadi et al., 2019; Quinn & Shera, 2009).

Generally, group therapy is the preferred option, especially in programs focussing on building life skills as the group dynamic allows young offenders to relate to others outside their peer group and develop meaningful connections (Aronson & Kahn, 2004; O'Brien et al., 2016; Quinn & Shera, 2009). The group format has been shown to facilitate social development in the youth custody context (Malvaso et al., 2022).

Strength-based approaches. Over the last two decades, there has been a shift in treatment programs for young offenders towards a more strength-based approach (Dwyer & Oostermeijer, 2022). This approach is also utilised for addressing and enhancing the health and wellbeing of Aboriginal and Torres Strait communities (Gupta et al., 2020). This includes developing their interests and promoting healthy positive interactions to achieve an overall positive impact on the sense of self (Dwyer & Oostermeijer, 2022). This approach requires an understanding of the unique strengths and challenges they face in order to support them and enable improvements to their wellbeing (Bower et al., 2018; de Beer et al., 2022; Dwyer & Oostermeijer, 2022). Allowing young offenders to make decisions about what to do in a therapeutic treatment program enhances their ability to handle their own health needs (Gill et al., 2023). Having young offenders pursue goals influenced by personal, cultural and social factors is also crucial (Serie et al., 2023). This approach has had a positive influence on skill development in terms of creativity, critical thinking, problem solving and communication (Semilarski et al., 2021).

Applicable skills. Implementing strategies that enhance engagement and impart real-life skills has been shown to facilitate the development of resilience and contribute to overall wellbeing (Kobau et al., 2011; Price et al., 2014) for this cohort. Practical and action-

orientated treatments, such as role plays that recognise limitations due to cognitive and social cognitive impairments, were effective in treating mental health disorders among young offenders (Underwood & Washington, 2016). This aligns with the perspective that using practical activities is key for skill development in young offenders (Gill et al., 2023; Malvaso et al., 2022; Usher et al., 2019). Activities aimed at improving emotional regulation and cognitive development and building coping skills and resilience were crucial in this context (Hein et al., 2020; Simpson et al., 2018; Young et al., 2017). Moreover, the research highlighted that adding cognitive exercises, group work, and treatments tailored to the individual were the most effective platforms for rehabilitation (Penadés et al., 2012).

Practical, real-life scenarios have been shown to enhance critical thinking, demonstrating the important role of skill development in daily life (Semilarski et al., 2021). Critical thinking, problem-solving and understanding different perspectives form a fundamental skill set (Semilarski et al., 2021). These skills enable young offenders to develop an open and flexible way of thinking and improve cognitive and social impairments. One international study in a youth custodial setting suggested that teaching problem-solving skills had assisted with cognitive development and reduced reoffending behaviours (Javadi et al., 2019).

New evidence shows that creating a treatment to boost thinking skills, such as getting better at controlling impulses and learning from mistakes, might help improve behaviour in young people at risk of conduct disorder (Rowlands et al., 2020). Even small improvements in thinking abilities could help them do better in school and work programs, improving their daily lives.

Cognitive remediation therapy (CRT): targeting cognitive deficits

Cognitive remediation therapy (CRT) is a behavioural training-based intervention designed to reduce cognitive deficits through repetitive exercises and positive reinforcement

while targeting thinking processes, such as attention, memory, metacognition, and social cognition (Hajri et al., 2022). CRT involves repetition and practice in specific tasks designed to improve cognitive processes (Cella & Wykes, 2019). The cognitive strategies learned through CRT are transferable to real-world scenarios (O'Reilly et al., 2019), and were shown to influence recovery outcomes, in that these skills improve real-world functioning (Vita et al., 2021).

Cognitive remediation, if applied at an early stage, may enhance thinking abilities and has the potential to provide long-term gains for individuals experiencing mental illness (Harris et al., 2022). Although studies which include a meta-analysis of children and young people are relatively few, emerging evidence shows CRT as an effective approach for this cohort (Fisher et al., 2015; Hajri et al., 2022; Legemaat et al., 2022). Hajri et al. (2022) reported CRT being effective in children and young people with ADHD (Hamza et al., 2018), learning disorders (Azizi et al., 2018), early onset psychosis (Puig et al., 2014) and expanding into treatment for intellectual disability (Demily et al., 2016).

Azizi et al. (2018) demonstrated the efficacy of CRT in children aged 7-10 years with learning disorders. This CRT intervention involved a 7-week program comprising 20 sessions, three times a week for both child and parent. Results showed improvements with sustained attention. Hamza et al. (2018) examined the effectiveness of CRT in children (average age 9 years) diagnosed with ADHD, assessing its impact on attentional and executive functions. The sessions spanned 14 weeks, one session per week lasting 40 mins each. They found a notable enhancement in executive control ($p=0.009$). Puig et al. (2014) examined the effect of CRT on enhancing cognition and functional outcomes among adolescents aged 12-18 years with early-onset psychosis. Forty sessions were completed twice a week over 20 weeks. Improvements were observed in verbal memory and executive

functioning, with medium to large effect sizes. Additionally, a medium effect size was shown in improvements in daily living and adaptive functioning, and a large effect size was noted in reducing the burden on families.

CRT interventions use creative strategies to sustain interest, including computerised tools, logical games, and virtual reality simulations (Demily et al., 2016; Pasqualotto et al., 2021; Ramli & Purba, 2023). Using developmentally appropriate activities, such as games and youth friendly technology, CRT encourages self-reflection about thinking processes, helps develop new strategies, and enhances thinking skills (O'Reilly et al., 2019). It facilitates metacognition, helping young people to enact behavioural changes (Tchanturia et al., 2017). CRT has also shown improved cognitive flexibility, quality of life, and motivation for positive change (Bowie, 2019; Kim et al., 2018; Legemaat et al., 2022; Pasqualotto et al., 2021; Tchanturia et al., 2017).

Facilitators of CRT are encouraged to build strong therapeutic alliances and support the individuals throughout all activities (Cella & Wykes, 2019). Facilitators help individuals use specific strategies for an activity and encourage regular practice, which significantly enhances outcomes.

CRT in forensic settings. CRT has been used effectively in forensic settings (Bowie, 2019; Kim et al., 2018; O'Reilly et al., 2019; Vidarsdottir et al., 2019; Vita et al., 2021). O'Reilly et al. (2019) observed a significant improvement (Cohen's d =0.34) in visual and working memory. Similarly, Ahmed et al. (2015) observed improvements in attention (Cohen's d =0.55), working memory (Cohen's d =0.47), and verbal learning (Cohen's d =0.54). These improvements correlated with reductions in instances of verbal (Cohen's d =-0.42) and physical aggression (Cohen's d = -0.54) across both forensic and mental health

groups. In other work, teaching cognitive skills to incarcerated adults was associated with a reduction in recidivism rates of 20-30% (Bush, 2016).

Although there are few custodial intervention programs targeting mental health challenges in young offenders, the potential impact of CRT on mental health and neurodevelopmental disorders was seen as promising (Hajri et al., 2022; Rowlands et al., 2020). Rowlands et al. (2020) used an eight-week program of cognitive training to effectively enhance thinking abilities in young offenders in a custodial setting. This study showed improved cognitive performance among young offenders with conduct disorder. It also showed a high retention rate of over 80% suggesting a high level of engagement. This study demonstrated that cognitive training was feasible, tolerable, and acceptable to young offenders in custody. The conduct of the study was greatly assisted by the close collaboration between mental health and youth justice staff and the research team. Additional studies showed the effectiveness of cognitive remediation intervention among young offenders in custody, particularly when a positive therapeutic alliance was present (Pooley, 2020).

Cullen et al. (2012) conducted a randomised controlled trial to evaluate a cognitive skills program for offenders with mental health disorders in a secure forensic inpatient setting. The results showed a decrease in incidents of verbal aggression during the treatment period, and this was sustained during the 12-month follow-up. Another study used a 13-week behavioural treatment group intervention to modify attitudes of young offenders in youth custodial centres (Javadi et al., 2019). The focus was life skills development including self-awareness, anger management and problem solving. The results showed a beneficial impact on young offenders.

Cann et al. (2005) conducted a group intervention aimed at teaching cognitive skills and thinking patterns to young offenders (mean age= 20 years). The program focused on

impulse control, flexible thinking, values and moral reasoning, problem solving, social perspective-taking, and critical reasoning. The one-year reoffending rate for those completing the program was significantly lower than that of the matched comparison group.

In a rapid review of psychological interventions within forensic settings, the analysis revealed that cognitive remediation and CBT had the best outcomes when addressing violence, aggression and recidivism (Dumont et al., 2018). Both approaches primarily focused on skills acquisition and enhancement. Cognitive remediation, social cognition, social skills, problem solving, and emotion regulation were key elements in addressing deficits contributing to criminal and aggressive behaviours.

Critical analysis of CRT. In a group psychiatry setting, CRT showed cognitive improvements and enhancements of psychosocial functioning (Cella & Wykes, 2019; Hodge et al., 2010). CRT studies consistently illustrated small to medium effect sizes for cognitive improvement (van Duin et al., 2019). When CRT is coupled with other approaches, such as therapist guidance and the development of life skills, it has been shown to improve functioning (Bowie, 2019). The approach used in CRT was enhanced when therapists explicitly taught cognitive strategies (Penadés et al., 2012). Studies have found that CRT improves retention and functional outcomes when setting individual goals and behavioural tasks (Bowie, 2019). Researchers identified the need to add communication, interpersonal and emotional regulation skills to CRT strategies to improve the overall effectiveness of the treatment.

Social cognition remediation therapy (SCRT)

Increasingly, CRT is seen as a foundation treatment on which other psychosocial treatments are built and not as a standalone treatment approach (Hajri et al., 2022; Kim et al., 2018; Penadés et al., 2012; Tchanturia et al., 2017). An example of this is combining with social cognition remediation therapy (SCRT) programs such as psychosocial rehabilitation

(Penadés et al., 2012) or social cognitive training (Avenevoli et al., 2008; Dooley & Fitzgerald, 2012; Kessler et al., 2005; Kim et al., 2018; Penadés et al., 2012).

SCRT teaches crucial aspects of social situations and interactions, providing insight into perceiving, understanding and responding to the intentions and behaviours of others (Wykes, 2018). SCRT targets emotional processing, social perception, attribution bias and theory of mind (ToM) (Fernandez-Sotos et al., 2019). This treatment can improve interpersonal skills such as empathy, which is crucial for successful communication and social interaction (Cotter et al., 2018). SCRT programs such as social cognition interaction training (SCIT) (Roberts et al., 2004) have shown improvements of emotion recognition and ToM (Combs et al., 2007; Penadés et al., 2012; Penn et al., 2005). SCIT addresses multiple domains, whereas other social cognition interventions focus solely on a single domain (Grant et al., 2017).

Social cognition training showed significant improvements with facial affect recognition (Bölte et al., 2002; Hubble et al., 2015; Wang et al., 2013), face and voice recognition (Golan & Baron-Cohen, 2006), ToM and social cognition skills (Bölte et al., 2002; Wang et al., 2013). Turner-Brown et al. (2008) found that individuals in the SCIT group performed better in ToM abilities, with improved social communication skills. The findings showed a within-group large effect size for social cognition, (Cohen's $d = 0.94$). Conversely, the control "treatment as usual" group did not exhibit such improvements.

In a study by Bölte et al. (2002), ten adolescent individuals diagnosed with autism or Asperger's syndrome underwent a five-week training program of emotion perception, two hours per week. Significant improvement was found in facial emotion recognition compared to the control group in which there was no improvement. In a study by Wang et al. (2013) participants with schizophrenia underwent SCIT for 20 hours over a period of 20 weeks.

Significant between-group effects were observed, with the SCIT group demonstrating larger improvement in facial recognition, understanding others' perception, interpreting causes of events and social functioning within group effects ($F(1.38) = 30.88$, $p < 0.001$, $\eta^2 = 0.46$) compared to the control group. SCIT also significantly improved social functioning, particularly in reducing aggressive behaviours.

Lui et al. (2019) conducted a study on emotion-processing skills training addressing emotion recognition and perspective taking impairments in youths (mean age= 16.54) with callous-unemotional traits. The study showed improvements in their ability to see the perspectives of others, have empathy and practise prosocial behaviour.

SCRT has enhanced how individuals understand and interact with the social world (Fernandez-Sotos et al., 2019; Nijman et al., 2020; Penn et al., 2005). Penn et al. (2005) suggested that SCIT led to better outcomes in ToM and attributional style among a group of hospitalised individuals with psychosis. The social cognitive deficits found in autism spectrum disorders, schizophrenia, and other neurodevelopmental conditions have also been treated effectively by SCRT programs (Dubreucq et al., 2020; Hajri et al., 2022; Turner-Brown et al., 2008). Integrating real-life scenarios into SCRT treatment programs was also considered to be important in developing social cognition and better quality of life outcomes (Dubreucq et al., 2020) and complementing the CRT process.

SCRT in forensic settings. Social cognition treatment in forensic settings has yielded favourable results (Combs et al., 2007; Hubble et al., 2015). Social cognition training has been used in many treatment programs, such as social skills and social problem-solving training and understanding emotions, that target externalising and reoffending behaviour in youth custody (Hein et al., 2020). Strong evidence exists for skill-building treatment programs, such as emotional regulation skills when working with young offenders.

Using a group format for SCRT has shown added benefits in developing social functioning through modelling, peer support and group discussions (Nijman et al., 2020). SCRT groups have improved the development of complex skills for higher-order social cognition, such as understanding others' perspectives and interpreting social situations. SCRT group programs are effective in working with young offenders, particularly in targeting perspective-taking skills and demonstrating a reduction in impulsiveness and enhancing critical thinking (van der Stouwe et al., 2016). On the other hand, individual treatments enhanced individual emotional perception (Nijman et al., 2020).

Combs et al. (2007) conducted a group based SCIT program targeting social cognition in individuals with schizophrenia in a forensic setting. The intervention was conducted over 18 weeks, totalling 18 hours, and found significant reductions in aggressive behaviours compared to the control group (η^2 $p < 0.01$). Additionally, SCIT demonstrated positive impacts on facial emotion perception (low impact), theory of mind (ToM) (high impact) and attributional style (low impact). In a shorter intervention, Hubble et al. (2015) aimed at enhancing young offenders' (mean age 16.08 years) ability to identify facial expressions over two weeks using a computerised program. Results indicated a reduction in the severity of reoffending among the intervention group which was statistically significant at the $p=0.004$ level.

Treatment programs focusing on social cognition and building emotional skills training have reduced reoffending behaviour (Cotter et al., 2018; Hodgkinson et al., 2021b; Hubble et al., 2015). Improving social cognition and communication skills through targeted treatments has contributed to young offenders' ability to navigate social interactions, understand others' emotions and express their own emotions more clearly (Hodgkinson et al., 2021a). As a result, they are better equipped to build positive relationships and interact

effectively with peers and authority figures, reducing interpersonal conflicts and enhancing social adaptability.

Critical analysis of SCRT. Grant et al. (2017) conducted a systematic review on social cognition interventions, finding it beneficial for individuals diagnosed with schizophrenia. However, limitations, such as variations in measures, study methodologies, and short follow-up periods, have raised some doubts about the reliability of the findings (Cotter et al., 2018; Grant et al., 2017; Keefe et al., 2013). Fernandez-Sotos et al. (2019) also conducted a systematic review, revealing minimal research in social remediation interventions aimed at improving social cognition deficits. Grant et al. (2017) concluded that future research should use standardised measurements, conduct adequately powered studies, and explore the effects of social cognition gains on functional impairments.

However, SCRT treatments are gaining increasing support as potentially successful interventions (Combs et al., 2007; Fernandez-Sotos et al., 2019; Penn et al., 2005), especially using strategies like practising with social scenarios and learning coping strategies for individuals' difficulties (Nijman et al., 2020). Nijman et al. (2020) identified a large effect (Cohen's d of 0.82) on psychosocial function with SCRT programs. Yeo et al. (2022) conducted a meta-analysis of studies using SCRT in treating schizophrenia and found effectiveness in improving social cognitive outcomes consistent with the meta-analyses studies by Kurtz and Richardson (2012) and (Nijman et al., 2020). Moderate effects were observed in mental state attribution and social perception suggesting that SCRT can address complex social-cognitive processes.

Evidence for combined CRT and SCRT treatment

Utilising a combined approach of CRT and SCRT has been shown to strengthen the impact of the overall treatment by regulating stress responses and emotional experiences

(Isaac & Januel, 2016). This approach is proposed as a viable treatment option to advance the cognitive, social, and functional recovery of young offenders in the context of mental health and neurodevelopmental disorders.

Dubreucq et al. (2020) conducted a group treatment using SCRT followed by CRT for 15-weeks with individuals diagnosed with schizophrenia. The findings showed improved symptoms and social functioning with a large effect size. Specifically, improvements occurred in aggression, social cognitive bias, and verbal abstraction ($p=0.008$, $d= 0.554$). A systematic review examining the effectiveness of CRT and SCRT in managing violent and aggressive behaviours in schizophrenia was conducted by Darmedru et al. (2017). The interventions showed a positive impact on controlling and reducing overall aggressive attitudes and physical assaults. Improvements were observed with social cognition and executive functioning, enhanced interpersonal relationships and reduced impulsivity. While these results are promising, further randomised studies are needed to complement current evidence on CRT and SCRT efficacy in violence management.

Byrne et al. (2015) conducted a brief CRT and facial affect recognition training program over six weeks (12 hours total) at a mental health centre. Significant improvements were observed in personal and social performance (PSP) in the intervention group compared to the control group ($F (1.37) =1.85$; $p=0.018$), with a moderate impact on the perception of facial emotions, particularly fear. Additionally, the impact on social functioning, including reductions in disturbing and aggressive behaviours, was substantial in the intervention group. This study highlights the positive impacts of CRT on social functioning for individuals diagnosed with schizophrenia.

There is growing evidence that CRT and SCRT treatments when combined are complementary, leading to additional potential benefits for individuals with various cognitive

and social challenges (Dark et al., 2018; Hajri et al., 2022; Harris et al., 2022; Vidarsdottir et al., 2019) and for different mental health disorders (Dark et al., 2018; Darmedru et al., 2017; Dubreucq et al., 2020; Hajri et al., 2022; van Duin et al., 2019). Hajri et al. (2022) emphasised that this combined approach leads to improved cognitive and social functioning for children, such as enhancement of attention, memory, problem-solving, social skills and social interaction. Harris et al. (2022) showed improved functioning for young people with serious mental illness, despite not seeing a change in measures of cognitive or social functioning.

Cognitive and social cognitive remediation treatments have been shown to improve recovery, thus reducing the healthcare burden, and potentially enhancing the lives of young offenders (Poppe et al., 2021). As discussed above, both CRT and SCRT used separately can remediate social and neurocognitive deficits in individuals with severe mental health conditions (Bulman, 2017; Couture et al., 2006; Dark et al., 2018; Darmedru et al., 2017; Fernandez-Gonzalo et al., 2015; Harrington et al., 2005; Harris et al., 2022; Lindenmayer et al., 2018; Pasqualotto et al., 2021; Peña et al., 2016; Peña et al., 2018; van Duin, 2019; Vita et al., 2021). Other work has indicated that combining CRT and SCRT can enhance work performance, relationships and living skills by concurrently addressing cognitive and social elements (Peña et al., 2018; Vidarsdottir et al., 2019). The integration of CRT and SCRT has demonstrated positive outcomes for quality of life, as indicated by improved social relationships and increased self-esteem (Darmedru et al., 2017; Jones & Harvey, 2020; van Duin, 2019; Wykes, 2018). Despite the evidence supporting the efficacy of cognitive and social remediation, there has been no research combining these treatments to explicitly target young offenders in custody dealing with mental health and or neurodevelopmental disorders.

Summary of findings

This review of the literature gives a comprehensive picture of the challenges faced by young offenders, highlighting the multifaceted nature of their experiences and the complex interplay of factors contributing to their criminal behaviour. The research highlights the significance of mental health and neurodevelopmental disorders, neurocognitive and social cognition impairments, and ACEs in shaping the trajectory of young offending (Baetz et al., 2021; Borschmann et al., 2020; Haysom et al., 2023).

The overrepresentation of Aboriginal and Torres Strait Islanders in youth custody underlines the need for culturally informed interventions (Hamilton et al., 2019). Trauma exposure is prevalent among young offenders and significantly impacts their mental health, social and cognitive functioning (de Beer et al., 2022; Gagnon et al., 2022). Access to effective treatment programs within custodial settings is crucial for addressing the complex needs of young offenders (Borschmann et al., 2020; Hamilton et al., 2019). However, there is limited research on effective programs treating mental health and neurodevelopmental disorders and this highlights the need for further investigation (Gagnon et al., 2022).

Adopting a trauma-informed and culturally sensitive approach is essential for delivering effective interventions (Vitopoulos et al., 2019). Early assessment and tailored treatments are vital in addressing the diverse needs of young offenders and facilitating their cognitive and social development (Borschmann et al., 2020; Gill et al., 2023). Furthermore, it is crucial to recognise the role of education and health in shaping life outcomes for these young offenders (Mirowsky, 2017). Educational achievement influences the ability to secure employment and develop appropriate interpersonal skills but also enhances access to appropriate health services (Mesholam-Gately et al., 2009).

Utilising a combined treatment approach of CRT and SCRT shows promise in promoting the recovery of young offenders with mental health and neurodevelopmental

disorders (Isaac & Januel, 2016). This approach has the potential to be part of a comprehensive strategy to address the complex challenges faced by young offenders and support their rehabilitation and reintegration into society.

A treatment program combining CRT and SCRT, and informed by the findings of this literature review, could provide young offenders with the tools needed to live more independently, developing personal growth skills which help them to achieve success in adulthood. CRT and SCRT training targets deficits caused by mental health and neurodevelopmental disorders that are prevalent in young offenders (Penadés et al., 2012). By tackling these mental health issues, such a program could improve young offenders' overall wellbeing. Positive results in CRT programs include good retention rates, achievement of goals, and the practical application of learned strategies (Bowie, 2019). Additionally, SCRT shows promising outcomes in reducing impulsiveness and reoffending behaviours (Cotter et al., 2018; Hodgkinson et al., 2021b). Altogether this review supports the development and evaluation of a combined CRT and SCRT treatment program addressing the complex needs of young offenders in custody with the longer-term goal of facilitating successful transitions for youth offenders back into society.

CHAPTER TWO: Methodology

Introduction

Understanding and addressing the complex needs of young offenders with mental health issues is necessary to facilitate their successful reintegration back into society after being in custody. This School-Link Advantage (SLA) pilot study evaluates the feasibility and effectiveness of a group treatment program targeting neurocognitive and social cognitive impairments in young offenders to address this need. This multiphase study aims to implement a structured group treatment manual (Appendix 1) within a custodial setting and assess the program's acceptability and potential impact on participants' neurocognitive and social functioning.

Note: The original study protocol did not include the Clinical Global Impression (CGI) measure. This was introduced to measure participants' pre- and post-assessment functioning because of the poor return rate from participant support workers in relation to the pre- and post-treatment functional assessments. The CGI was chosen because it was easy to administer using clinical notes and there was no extra burden placed on participants or support workers.

Improving thinking and social skills in young people in custody with mental health conditions: Justice Health NSW School-Link Advantage pilot study protocol

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Abstract

Background: Most young people in custody have experienced poor educational attainment, unstable housing, mental health concerns, substance misuse and/or limited family support. These barriers can affect social and cognitive development, having a negative impact on healthy life choices and general functioning.

Methods: The Justice Health NSW SLA pilot study is a multiphase initiative designed to develop, implement, and pilot a group treatment program (intervention) combining Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) for young people in custody with mental health conditions. The study aims to improve cognitive and social deficits through skill development, enhancing functioning across vocational and social domains. Young males from a New South Wales youth custodial site participated in a 20-session group treatment program. A total of four groups were facilitated.

Data collection and analysis: The pilot study results are drawn from pre- and post-treatment assessment measures, an evaluation of participants' mental health conditions, participant semi-structured group interviews and feedback from participants and support workers. Analysis of the results examines the feasibility of referrals, rate of retention of participants and acceptability of the treatments.

Discussion: The results of this pilot study aimed to provide valuable information about whether a tailored group treatment program for young offenders with mental health and neurodevelopmental disorders will enhance their cognitive and social emotional skills, and overall functioning. Key considerations included sustaining participant engagement, tailoring the activities, addressing challenges in the custodial environment, collaboration between services and respecting cultural beliefs. These insights aim to inform and improve future treatment programs for young offenders.

Background

Every day in Australia, on average, 819 young people (aged from 10 to 21 years) are in youth custody due to involvement, or alleged involvement, in crime (Australian Institute of Health & Welfare, 2022). Many young offenders face numerous challenges, including low educational attainment, housing instability, mental health issues, substance misuse, and limited family support (British Medical Association, 2014; Munro & Stein, 2008). Research shows such adverse childhood experiences (ACEs) can create vulnerabilities in young offenders (Malvaso et al., 2022) which manifest in antisocial activities (Haysom et al., 2023; Marr et al., 2023; Singh et al., 2017; Testa et al., 2022). Ultimately, these vulnerabilities limit their ability to thrive and successfully transition into adulthood (Sapiro & Ward, 2020). For these reasons, helping young offenders establish independent and fulfilling lives after leaving custody presents many challenges, but failing to do so leads to high rates of recidivism at a high cost to society.

Generally, young offenders have had poor access to health care services for both physical and psychological needs (Singh et al., 2017). The result of poor access to treatment is demonstrated in global data that young offenders experience higher rates of mental health problems compared to the general population (Day, 2022; Sapiro & Ward, 2020). Approximately 70% to 90% of young offenders in Australia report experiencing mental health and substance use disorders (Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017; Singh et al., 2017; Usher et al., 2019). This is represented as follows: conduct disorder (59%); substance use disorder (64%); anxiety disorder (32%); ADHD (30%); major depression (17%); bipolar disorder (4%); and schizophrenia and/or other psychotic disorder (5.5%) (Butler et al., 2011; Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017). Various studies demonstrate high rates of young offenders experiencing mental health and neurodivergent conditions (Bower et al., 2018; Day, 2022;

Haysom et al., 2023) and with significant impact on their socio-emotional capabilities and executive functioning skills (Danielson et al., 2021; Farrington et al., 2012; Kim et al., 2018; Simpson et al., 2018).

Mental health, neurocognitive and social deficits commonly lead to long-term developmental impacts across social and functional domains (Cotter et al., 2018; Kim et al., 2018). This contributes significantly to poor life outcomes for young offenders, particularly when they come into contact with the criminal justice system (Farrington et al., 2012; Sapiro & Ward, 2020). This manifests as difficulties in making decisions, poor impulse control, and struggles with recognising and managing emotions, leading to adverse effects when engaging in prosocial activities, forming positive peer relationships and managing frustration and conflicts (Haysom et al., 2023; Kim et al., 2018; Marr et al., 2023; Papadopoulou et al., 2014).

When left untreated, these deficits can have far reaching consequences, including diminished motivation and reduced engagement in the learning process, resulting in an increased risk of disengagement from school (Sapiro & Ward, 2020). Both health and education significantly impact on life outcomes, and there is a complex interplay between these two aspects (Mirowsky, 2017). The more educated you are, the easier it is to access health and wellness services. Levels of health and education also influence the ability to have a good job with adequate income opportunities and to develop appropriate social cognitive skills (Mesholam-Gately et al., 2009). One-third of young offenders will disengage from educational services, leading to a lack of verbal language skills (Gill et al., 2023; Hopkins et al., 2016; Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017; Marr et al., 2023). This contributes to social, emotional and behavioural problems and poor functioning capabilities (Gill et al., 2023). The result for this population is significant health and socio-economic costs (Sapiro & Ward, 2020; Singh et al., 2017).

Custody can be used as an opportunistic avenue for early intervention, as young offenders can be remanded/sentenced to custody for lengthy periods of time (Haysom et al., 2023). Access to interventions in custody offers the potential to achieve substantial gains in improved cognition, mental health, and wellbeing (Keefe et al., 2013; Tchanturia et al., 2017; Usher et al., 2019). The restrictive custodial environment provides access to education and health services that young offenders may not have otherwise gained. This includes formal education, and other helpful life skills training, such as planning and self-control (Berkman et al., 2011; MacKenzie, 2018). Adolescence is also a crucial point in life development – a pivotal time to develop new skills and strive for independence. This makes interventions more impactful at this developmental stage (Avenevoli et al., 2008; Dooley & Fitzgerald, 2012; Kessler et al., 2005).

During adolescence, a transition period into adulthood, the primary focus often revolves around gaining independence, although maintaining connections with others also remains vital role at this time (Sapiro & Ward, 2020). Establishing supportive relationships is vital for mental health and physical wellness and is a key element in recovery and social reintegration for young offenders. Developing the capacity for connectedness through peers is a key ingredient for social reintegration for young offenders. Using a group format treatment program has the capacity to help build connections and social integration for participants, while also focusing on developing growth and resilience to assist with the smoother transition into adulthood (Sapiro & Ward, 2020). A strong therapeutic alliance with the therapist is another element of connection (Cella & Wykes, 2019), and this focus is built into the pilot study protocol, with group cohesion and connection between the clinician facilitator and participants developed throughout 20 treatment sessions over the 10-week timeframe of the treatment program . A strong therapeutic alliance is a good predictor of functional improvements, especially therapeutic goals (Cella & Wykes, 2019).

Combined cognitive and social cognitive remediation treatment approach

The treatment intervention trialled during the Justice Health NSW SLA pilot study amalgamates Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) using a group format, implemented as a treatment program at a youth custody site. These two therapeutic approaches are complementary, enhancing cognitive functioning and improving social interaction skills for individuals with various mental health conditions (van Duin, 2019). In combination, these therapies have been shown to have an increased impact on enhancing individuals' cognitive abilities and improving their ability to navigate social interactions, leading to better wellbeing and functional recovery outcomes (Baetz et al., 2021; Dark et al., 2018; Darmedru et al., 2017; Harris et al., 2022; Jones & Harvey, 2020). The intervention aims to facilitate neurocognitive and social cognitive skill development and increase levels of functioning in everyday situations for this cohort (Darmedru et al., 2017; Harvey & Sand, 2017; Isaac & Januel, 2016; Jones & Harvey, 2020; van Duin, 2019; Vita et al., 2021), thus helping young offenders attain work or pursue educational and vocational goals after incarceration, and reducing recidivism rates.

CRT is a psychological approach that employs various cognitive training activities to promote self-reflection about thinking processes, cultivating new strategies, and thinking skills. It promotes metacognition, helping young people to enact behavioural changes (Tchanturia et al., 2017). CRT has proven to be a successful approach in addressing mental health issues, leading to enhancements in cognitive flexibility, quality of life, and motivation for positive change (Bowie, 2019; Kim et al., 2018; Legemaat et al., 2022; Pasqualotto et al., 2021; Tchanturia et al., 2017). Although there are few studies focusing specifically on CRT for youth participants, there are indications that CRT is effective in a group format (Harris et al., 2022). When working with a youth population, it is relevant to incorporate developmentally appropriate activities (i.e., games) to match the varying cognitive abilities

within the group and to encourage reflective thinking (Malvaso et al., 2022). The pilot study design incorporates frequent prompts for meta-reflection (Tchanturia et al., 2017), such as: *What thinking patterns do you notice?; What strategies and skills did you use to be effective in this activity?; How did your mindset affect how you approached this activity?*. CRT teaching strategies also require facilitators to build strong therapeutic alliances with participants and provide various levels of support for them during all activities (Cella & Wykes, 2019). When the facilitator helps an individual use and regularly practise specific strategies, this improves outcomes for the participant (Malvaso et al., 2022). CRT involves practising specific tasks that can help improve how the individual thinks (Cella & Wykes, 2019).

Many studies reflect that CRT should not be considered as a standalone treatment (Hajri et al., 2022; Kim et al., 2018; Penadés et al., 2012; Tchanturia et al., 2017) and can be enhanced by combining with SCRT programs such as psychosocial rehabilitation (Penadés et al., 2012) or social cognitive training (Avenevoli et al., 2008; Dooley & Fitzgerald, 2012; Kessler et al., 2005; Kim et al., 2018; Penadés et al., 2012).

SCRT effectively enhances how individuals understand and interact with the social world (Fernandez-Sotos et al., 2019; Nijman et al., 2020; Penn et al., 2005). Many studies demonstrate that SCRT programs lead to significant improvements in the theory of mind (ToM), emotional processing, and attributional bias among young people, especially when conducted in a group format (Nijman et al., 2020). These programs have been shown to result in enhanced social functioning, improved relationships and better overall quality of life (Dubreucq et al., 2020). Social cognitive deficits, such as those seen in in autism spectrum disorders, schizophrenia, or certain neurodevelopmental conditions, are also treated

effectively by SCRT programs (Dubreucq et al., 2020; Hajri et al., 2022; Turner-Brown et al., 2008).

Both CRT and SCRT used separately show evidence in remediating social deficits and neurocognitive deficits for individuals with severe mental health conditions (Bulman, 2017; Couture et al., 2006; Dark et al., 2018; Darmedru et al., 2017; Harrington et al., 2005; Harris et al., 2022; Pasqualotto et al., 2021; Peña et al., 2016; Peña et al., 2018; van Duin, 2019; Vita et al., 2021). There is growing evidence that CRT and SCRT used in combination offer potential benefits for individuals with various cognitive and social challenges, for example, mental health conditions (Hajri et al., 2022). Evidence reflects that these benefits include improved cognitive and social functioning, such as enhancement of attention, memory, problem-solving, social skills and social interaction (Hajri et al., 2022). Benefits to quality of life are evidenced by individuals experiencing better social relationships, increased self-esteem, and a higher sense of wellbeing (Darmedru et al., 2017; Jones & Harvey, 2020; van Duin, 2019). Additionally, benefits include developing greater generalisable skills to assist individuals in real-life situations, helping them in everyday interactions (Dubreucq et al., 2020). When these programs are applied using a group format, research shows that individuals benefit from practising and applying their skills with their peers (Dark et al., 2018; Harris et al., 2022; Hogarty et al., 2004). Although there is limited research specifically for young people about the effects of these treatments, Harris et al, (2022) found that a combination of CRT and SCRT improved function for this cohort. However, it is unclear whether these treatments are acceptable for young people in custody, and this is a focus of the pilot study.

Research objectives

Given the strong association between incarceration and poor mental health, cognitive difficulties, and poor functioning, the pilot study was designed to determine the feasibility

and acceptability (viability) of running a combined CRT and SCRT group treatment program in a youth custodial setting. Additionally, this pilot study explored the relationship between neurocognition, social cognition and functional outcomes in this population.

Specifically, the pilot study aims were: (1) to develop a combined treatment program of CRT and SCRT; (2) to explore the feasibility and acceptability of using Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) in the context of young people in custody with cognitive difficulties and mental health conditions; and (3) to investigate whether the measures designed for this study provide sufficient information to evaluate participants' functional changes.

We hypothesised that: (1) delivering this combined group treatment program will be feasible in the restrictive youth custodial environment and acceptable to young offenders experiencing mental health and neurodevelopmental disorders; (2) participants' neurocognition and social cognition will improve with the delivery of the combined treatment; and (3) participants will show improved functioning.

Ethics, consent, and permissions

This pilot study received ethics approval from the Justice Health NSW Human Research Ethics Committee (Reference 2019/EH13827), the Aboriginal Health and Medical Research Council Ethics Committee (Reference 1629/20) and the Youth Justice NSW Research and Evaluation Steering Committee (Reference D20/313) in late 2020. Informed written consent was obtained from all participants.

Methods

Design of the pilot study

The Justice Health NSW SLA pilot study is an open feasibility cohort design using a multiphase, 10-week evidence-based group treatment program (Dark et al., 2018; Harris et al., 2022) combining Cognitive Remediation Therapy (CRT) and Social Cognitive

Remediation Therapy (SCRT) for young people experiencing mental health concerns and cognitive difficulties in custodial settings. There are six stages in the pilot study: (1) Consultation and design; (2) Promotion; (3) Recruitment and baseline (pre-treatment) assessment; (4) Treatment; (5) Post-treatment assessment; and (6) Analysis. The treatment program operated as a closed group in order to develop connection and trust between members within the group and with facilitators.

Consultation process

Justice Health NSW clinicians and management supported the facilitation of this group treatment program. Consultations were undertaken with Youth Justice NSW management and the Department of Education. During the consultation meetings it was decided to reduce the treatment duration to 90 minutes (from a planned two hours) and to set the frequency of sessions to twice a week due to onsite restrictions and the need to optimise participants' focus, engagement, and attendance. Consultations provided valuable information that guided the design of the pilot study and assisted with running the program within the complex environment of a youth custodial centre.

This pilot study researchers sought advice, consulted, and collaborated with the Youth Justice NSW Aboriginal Strategic Unit, the pilot study's Aboriginal Reference Group (ARG), Justice Health NSW's Aboriginal Mental Health Clinical Lead, the Aboriginal Health and Medical Research Committee (AH&MRC) and the pilot study's supervisor to develop a culturally responsive practice. This approach was integrated into the treatment program, which used a client-centred approach, valued the diverse views of participants and staff, and built on participants' cultural strengths.

Justice Health NSW staff facilitated an hour-long information and consultation session for onsite Youth Justice NSW staff prior to the commencement of the treatment program. This covered evidence relating to the treatment program, questions about the

program and practical demonstrations of the activities for participants included in the sessions. Consultation was also undertaken with participants midway through each treatment group, with the purpose of obtaining their feedback on what aspects of the program they found helpful and gathering information on how to tailor the program to better meet their needs.

Treatment manual

The design protocols continued to be updated in response to participant feedback during the implementation of the pilot study treatment program. These modifications have been incorporated into the Session Treatment Checklist and into the development of a treatment manual for ongoing program implementation. This includes detailed session plans for the 20 treatment sessions (Appendix 1).

Impact of COVID-19

The emergence of the COVID-19 pandemic during the pilot study significantly disrupted the facilitation of the treatment groups. As a result of COVID-19 and restricted access to the youth custodial site, several pauses occurred throughout implementation of the treatment program with group 2 cancelled completely. The first treatment group was the only group that did not experience any interruptions due to COVID-19.

Treatment program/intervention framework

The intervention is described using the TIDieR protocol (Hoffmann et al., 2014) and was designed to cover: pre-and post-treatment assessments; goal-setting sessions; feedback sessions; and group treatment sessions. The 20 treatment sessions use CRT and SCRT activities adapted to match the restrictive setting, suited to the participants' learning capabilities and designed to enhance engagement by using the group format throughout the program. The CRT component is based on the Neuropsychological Educational Approach to Remediation program (NEAR) (Medalia et al., 2017) including the MindPowers guide. The

activities for the SCRT component of the intervention are based on Social Cognition and Interaction Training (SCIT) (Roberts et al., 2004) as adopted in the approach of Harris et al., 2022.

The NEAR activities (CRT component) target cognitive deficits by utilising commercially available educational software to create an intrinsically motivating and rewarding rich learning environment. Participants use individual smart tablets for this component to access and play the stored games. The group facilitators use MindPowers to guide the participants on focusing and working on their strengths, to encourage them to keep progressing with their activities.

The SCIT activities (SCRT component) use a manualised treatment designed to address social cognitive deficits for 30 minutes of each session. SCIT aims to improve understanding of others' thoughts and emotions and illustrates how to interpret and explain things (Fernandez-Sotos et al., 2019). The SCIT program comprises a manual-driven suite of activities, with participants receiving repeated exposure to, and practice in, skills that underlie complex mental-state reasoning abilities. Activities centre on social situations focussing on making inferences and predictions about characters' thoughts, feelings, and behaviours. Similar vignettes are repeated across different activities with frequent training material and concept repetition.

Each treatment session included CRT and SCRT activities, tailored to the participants' needs. Activities included debates and challenges, such as assessing the best mobile phone deal from various options with different features and costs. Activities used YouTube clips, quizzes, and physical challenges, based on participant engagement and feedback. Initially, sessions were designed to commence with SCRT activities followed by CRT. However, this was reversed to accommodate the circumstances of the custodial setting,

where participants were brought separately and at different times to the sessions. Session plans were amended to allow for individual work (CRT) at the start of the session, using iPads with pre-installed games at this stage. This also assisted with transitioning the participant into the therapeutic space. SCRT activities were conducted during the second half of each session, involving group discussions, with snacks distributed to signify transitions.

Parental support was considered an important element in the treatment program design, but due to access constraints, nominated support persons took on this role. Support workers received emails after each session and were encouraged to spend 5-10 minutes discussing goals and providing encouragement to the participant/s they supported. This was not always possible and depended on support worker capacity and work commitments.

Training for the group facilitator was provided by clinicians who undertook the study with Harris et al. (2022). The intervention is designed to be able to be provided by mental health professionals from a diverse range of backgrounds, supported by appropriate allied health and nursing professionals.

Program implementation

Participants voluntarily attended the 20 treatment sessions conducted over 10 weeks, each session running for approximately 60 to 90 minutes. The participants were invited to work on their metacognitive and social cognition skills. The treatment was delivered using iPads and through group activities and discussions. An attendance rate of more than 80% was required for completion of the program. Group facilitators completed a Session Treatment (Fidelity) Checklist and Feedback Questionnaires were given to all participants and support workers attending the treatment sessions (Appendix 2).

A check-in occurred at the midway point of the treatment program (Session 10) providing an opportunity for participants to discuss what they liked and what could be improved. This helped build trust and cohesion between facilitators and participants. In the

final session (Session 20), a graduation ceremony was held to celebrate participants' achievements. Participants' support workers and treating clinical care teams were invited to attend the ceremony and certificates were awarded to each participant completing the program. Group facilitators also held a semi-structured interview, or focus group, with all participants at the end of the final session for each group, to capture feedback about the group experience. See Appendix 4 for the interview questions template used for this component of the study.

Potential for adverse events

During implementation of the group treatment program there was the potential for adverse events to occur, such as participants with mental health conditions exhibiting problematic behaviour within the group. However, the risk of such situations escalating was minimised as the clinicians acting as group facilitators were trained to identify such behaviours early on and take steps to address any issues arising. The program was designed to include regular check-ins with participants' treating teams prior to, during and after the treatment program to enhance collaboration and achievement of goals, and to ensure appropriate care coordination of their treatment. Throughout the treatment program, participant wellbeing and safety were monitored and supported. Additionally, regular multidisciplinary meetings allowed discussion of how best to deal with problems, and regular communication was used to keep all clinicians, psychologists, and the treating clinical care team abreast of potential issues.

Participants

The pilot study aimed to recruit at least 15 participants aged 14-21 years from Reiby Youth Justice Centre (YJC), Cobham YJC and Frank Baxter YJC in New South Wales, Australia. This sample size was limited to a power analysis due to the small sample. By examining the custodial sites and considering our window for recruitment, we estimated that

30 young people would be eligible to participate in the treatment program, based on the number of young people with a minimum stay of six months, and who presented with a mental health condition. Based on the known response rate from previous pilot studies, an estimated response rate of 50% (Thabane et al., 2010) was anticipated (i.e., 15 participants). A cycle of three to six rounds of recruitment to the study was estimated as being needed to gain the required 15 participants.

Inclusion criteria for the treatment program were: (1) a diagnosis of a mental health condition and neurocognitive or social-cognitive deficits; (2) a minimum length of stay ranging from 8 to 14 weeks; (3) the ability to provide written consent (if under 16 years of age consent from a guardian was required); and (4) sufficient oral English skills.

Exclusion criteria for the pilot study were: (1) a diagnosis of intellectual disability recorded in the participant's clinical file by the Justice Health NSW consultant psychiatrist; (2) severe visual impairment; (3) severe hearing impairment; and/or (4) recipient of electroconvulsive therapy in the past six months.

Young offenders were invited to self-nominate for the pilot study. Youth Justice NSW psychologists and on-site Justice Health NSW clinicians (clinical nurse consultant or psychiatrist) also referred potential participants. Referrals were then considered at the regular on-site weekly multidisciplinary team meetings to discuss and review their suitability for the treatment program. If referrals were deemed suitable, an interview was held with each potential participant to discuss the study.

In addition to determining suitability through this process, clinical information was accessed, with consent, from each participant's clinical file, Justice Health NSW clinicians, and Youth Justice NSW staff. Initial suitability for inclusion was assessed by examining any specific conditions or concerns that may impact participants' ability to undertake the group treatment program.

Ultimately, 22 participants were recruited from one NSW Youth Justice Centre, Frank Baxter YJC, with 12 of these participants completing the group treatment program for the pilot study.

Consent

The participants received information about the study verbally and in written form. Written informed consent was obtained from each participant before inclusion in the study. It was emphasised to recruits that their participation in the trial was voluntary and that they could withdraw consent at any time without any consequences for treatment possibilities. No guardians were approached for consent as all participants could give individual consent.

Measures

For this study, the clinical and functional state of participants was categorised into three areas of assessment: (1) Neuropsychological Function; (2) Social Cognitive Function; and (3) Real-World Functional Performance. All measures utilised in the study are standardised and validated measures used routinely in clinical assessment, except the Feedback Questionnaires which are self-reported surveys (for participants and support workers). Standardised and self-reported measures take approximately 45 to 60 minutes to complete.

Demographic information. Demographic information was collected from each participant at the start of the pilot study. This included participants' age, gender, cultural background, mental health condition, identified brain injury, educational attainment, and relationship status.

Neuropsychological and social cognitive tests. All the following measures were completed by participants pre- and post-intervention.

The Rey Complex Figure Test and Recognition Trial (RCFT) is a standardised and reliable cognitive ability test that measures working memory, attention, planning and

visuospatial abilities (Meyers & Meyers, 1995). The RCFT asks participants to copy a complex line drawing by freehand and, three minutes after completion (i.e., Immediate Recall (IR)), asks the participant to draw the image again from memory, and then again at 30 minutes (i.e., Delay Recall, (DR)). Following the DR, the participants complete a Recognition Trial (RT). Age-corrected *t*- scores were analysed using the norms provided by Meyers and Meyers (1995). The RCFT was completed by participants pre- and post-intervention.

To assess executive function, the study utilised the Behaviour Rating Inventory of Executive Functioning **(**BRIEF)-2 (Gioia et al., 2015) for participants 18 years and under and the BRIEF-A (Roth et al., 2005) for those 19 years and above. The BRIEF-2 and -A are self-rating standardised questionnaire measures scored using a 3-point rating scale (1 = *never*; 2 = *sometimes*; 3 = *often*). The BRIEF measures executive functions: inhibition, self-monitoring, shift, emotion control, task completion, working memory, and planning and organising. Three subscales (Behaviour Regulation Index, Emotion Regulation Index, and Cognition Regulation Index) and the Global Executive Composite (EC) were also calculated. The scores were converted into age-appropriate *t*-scores. All participants completed the BRIEF pre- and post-intervention.

The Hinting Task (HT) was used as a measure of theory of mind (ToM) and assessed participants' capability to deduce the true intent of indirect communication (Corcoran et al., 1995). The HT involved facilitators reading aloud to participants ten scenarios that capture interactions between two characters, with one of the characters dropping a hint, which participants are tasked to identify. Participants were awarded 2 points if they correctly identified the hint, 1 point if they understood the story's meaning, or 0 if they were incorrect. The maximum score of 20 points indicates the highest social cognitive function.

The Penn Emotion Recognition Task (ER-40) measured participants' emotion processing (Carter et al., 2009). The ER-40 presents participants with 40 colour photographs of fixed expressions, one face at a time. Faces depict one of four emotions (happiness, sadness, anger, fear) or a neutral expression. Participants were asked to determine the emotion expressed in the 40 images, scoring 1 point for each correct response. Higher scores indicated better emotional recognition ability.

Real world functioning. The Personal and Social Performance Scale (PSP) was used to measure real-world functional performance, indexing the severity of participants' social and personal dysfunction (Patrick et al., 2009). The PSP was completed by support workers who rated participants across four domains: socially beneficial activities, personal and social relationships, self-care, and disturbing/aggressive behaviours. The PSP provides an overall rating score ranging from 1 to 100, with higher scores indicating better capabilities to manage oneself and everyday social functions.

The Clinical Global Impression (CGI) was used to evaluate the severity of mental illness as an additional measure of participants' functioning (Busner & Targum, 2007). It is scored via clinical evaluation of the participants' clinical notes and indicates changes in global functioning. The clinician rates participants' mental health conditions at pre- and post-assessment stages using a seven-point scale: 1= *normal, not at all ill*; 2 = *borderline mentally ill*; 3 = *mildly ill*; 4 = *moderately ill*; 5 = *markedly ill*; 6 = *severely ill*; 7 = *among the most extremely ill patients*.

Feedback Questionnaire. A 12-item feedback questionnaire was designed for participants and support workers (Appendix 2). These questionnaires assessed perceived improvements in functioning, enjoyable aspects of the treatment program, and whether the program was helpful. The questionnaire design was informed by past research, including (i) the overall experience, (ii) the tasks involved, (iii) the role of the research clinician (Keefe et

al., 2013), (iv) the structure of the sessions, and (v) group interactions as critical in reviewing a CRT program (Peña et al., 2018; Stein, 2008).

Session Treatment (Fidelity) Checklist. A fidelity checklist (Appendix 3) was completed by the facilitator after each treatment session to track adherence to the treatment program over the various cycles and track participant attendance and weekly incentives for good behaviour. The checklist records session structure, facilitators' actions, participant attendance, weekly rewards for good behaviour, consistency of treatment program delivery and an evaluation of adherence to, or deviation from, session plans. This data is collected to help understand participant engagement and rate of retention and to gather insights from group facilitators to inform future treatment programs.

Data collection and analysis

The data for our pilot study was collected from a non-probability sample involving consecutive group sampling. The research results have been analysed using a mixed method design involving qualitative and quantitative assessment.

Quantitative data analysis (Chapter 3)

All data analysis was conducted using IBM SPSS Statistics (version 24.0, Armonk, NY: IBM Corp). Eighteen matched paired *t*-tests were used to compare pre- and post-assessment scores for the RCFT (i.e., IR, DR and RT scores), the HT, the ER-40, the BRIEF inhibition, self-monitoring, shift, emotion control, task completion, working memory, planning/organising scores, as well as the BRIEF Behaviour Regulation Index, Emotion Regulation Index, and Cognition Regulation Index, the BRIEF Global EC, and PSP and CGI scores. Effect sizes were calculated using Cohen's *d* (Cohen, 1988). Findings were not corrected for multiple comparisons.

Qualitative data analysis (Chapter 4)

The data collected for the pilot study from participant focus groups conducted at the end of each treatment round (Appendix 4) and from the Treatment Session Checklists (Appendix 3) completed by facilitators after each session was analysed using Braun and Clarke's reflexive thematic analysis (Braun & Clarke, 2006, 2019, 2021). This analysis followed the six stages of reflexive thematic analysis: (1) familiarisation; (2) coding; (3) producing preliminary themes; (4) evolving and reviewing themes; (5) filtering, defining, and naming themes; and (6) write-up (Braun & Clarke, 2021).

The verified written transcripts were reviewed, coded, categorised into a table format, and analysed to identify themes and sub-themes. The analysis provided valuable insight into the participant experience and useful data to evaluate the treatment program. The table format was used, rather than NVivo 12 software, because of the small size of the data. The qualitative data analysis will allow the research team to fully understand the treatment program's feasibility, acceptability, and effectiveness.

Data protection and quality assurance

All physical records (e.g., consent, referral, and demographics forms) were stored in locked cabinets at Justice Health NSW premises in a coded format (i.e., re-identifiable only with project codes, which are stored separately from the project key identifying the codes) and only accessible to the research team. All electronic data was coded and stored in a lockable cabinet or on a secure computer database in password-protected files and only accessible to the research team within the NSW Health firewall. The data was deidentified entirely after the publication of all results.

A quality assurance process was designed for implementation throughout this pilot study. This would have involved research clinicians discussing and reviewing any issues and determining a plan to proceed, with guidance from the study supervisors. Although the

circumstances did not require this procedure, the study protocol noted that if the treatment was deemed ineffective for any participants, the research team would discuss possible alternatives with the treating clinical care team. This would involve ceasing the treatment and ensuring the participant has a closing treatment session, including feedback on the outcomes and an explanation of the study's limitations. The welfare of participants was monitored at all times during the study.

Data sharing

With the consent of participants, results were shared with their treating clinical care team to provide valuable insights into areas most needing support and to aid in delivering more targeted clinical care. All information collected from participants was de-identified before publication.

Discussion

The Justice Health NSW SLA pilot study engaged with young offenders facing complex mental health and social issues. There is limited research material available about treatment programs suitable for this group. It is hoped that, by combining CRT and SCRT treatments, this intervention will enhance skills growth for young people in custody facing such issues. Based on the feasibility of this study, consideration will be given to implementing this treatment program more widely for this population.

Several factors must be examined in reviewing the feasibility of the treatment program trialled in this pilot study. The first is understanding how to sustain participant engagement during the assessment and treatment stages. Strategies such as using interactive and meaningful activities (Kobau et al., 2011; Price et al., 2014), clear communication and regular feedback between participants and treating teams are important in this regard (Kilkelly & Pleysier, 2023; Trotter et al., 2017). Secondly, using interventions tailored to the

cognitive level of participants has helped manage many challenges with their thinking skills in the group sessions. Thirdly, it is critical to understand the restrictive custodial environment, where participants have limited choice in the short term to use any new skills learned throughout the treatment program. This becomes a challenge when everyday function is restricted, and where ways to measure functional growth are limited. Attainment of weekly rewards has been used to measure functional progress and compare pre- and post-treatment assessments within the restricted setting. The fourth factor for consideration is the need to provide an environment where participants feel understood, and their cultural beliefs and values are respected. Any future treatment programs of this nature should be administered by culturally competent professionals, providing an inclusive, respectful, and therapeutic environment where participants feel comfortable to express their views, feelings and choices. Furthermore, it is important to recognise that additional training for staff involved in the care of young offenders becomes important, particularly when there is limited access to parental support, to reinforce the strategies learned during the treatment program. Understanding these issues, and modifying the treatment program accordingly as required, will promote better engagement and outcomes for the participants involved.

Lastly, as this treatment program is conducted in a restrictive custodial setting, it is crucial to actively communicate and collaborate with the operational departments involved, such as Youth Justice NSW and the NSW Department of Education. Working in close partnership with key stakeholders in this restrictive environment has proven helpful in ensuring successful recruitment and retention of participants. Allowing for the adequate opportunity for participant feedback also assists with the high retention rate for the treatment program.

One of the strengths of this pilot study is the make-up of the research team, which consists of experienced mental health professionals. Their expertise has provided the capacity

for strong management of challenges during the treatment program and ensuring a safe and supportive therapeutic environment for participants. The research team have a wealth of experience and a focus on providing strong therapeutic alliances with participants to build trust and enhance the overall effectiveness of the treatment program. It is hoped that similar treatment programs of this nature in future will benefit from the findings of this pilot study.

Authors' contributions

The overall study and its design were devised by RJ, AH, PM and RB. RJ drafted the manuscript which was reviewed by DT, AH and RB. All authors approved the final draft.

Abbreviations

ACEs = Adverse Childhood Experiences; BRIEF = Behaviour Rating Inventory of Executive Functioning; CGI = Clinical Global Impression; CRT = Cognitive Remediation Therapy; ER-40 = Penn Emotion Recognition Task; HT = Hinting Task; PSP = Personal and Social Performance Scale; RCFT = Rey Complex Figure Test and Recognition Trial; SCRT = Social Cognition Remediation Therapy.

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Disclosure statement

The authors declare that the pilot study received financial support from the NSW Ministry of Health and that this posed no conflict of interest.

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CHAPTER THREE: Quantitative data analysis

Introduction

This chapter is provisionally recommended for publication, in the *Early Intervention for Psychiatry Journal*, subject to some minor revisions to this manuscript. We acknowledge the technical assistance of James Elhindi of the Research and Education Network, Western Sydney Local Health District, in guiding the interpretation of the statistical analyses reported in this chapter.

Examining the impact of a group treatment using Cognitive and Social Cognition Remediation for young offenders -- The Justice Health NSW School-Link Advantage pilot study

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Abstract

Background: Young offenders experience higher rates of neurodevelopmental and mental health disorders than the general population and face significant access barriers to health treatment. Treatment combining Cognitive Remediation Therapy (CRT) and Social Cognition Remediation Therapy (SCRT) has demonstrated benefits for functional improvements and social development. However, there is limited information regarding group treatment programs in custodial settings for young offenders. This pilot study explores the effectiveness and feasibility of a group treatment program for youth offenders with cognitive deficits and mental health concerns in youth detention.

Methods: The School-Link Advantage (SLA) pilot study designed and tested a 10-week group treatment program combining CRT and SCRT for young offenders in custody. The closed groups incorporated interactive activities focussed on emotional recognition and regulation skills, optimising executive functioning, understanding values, exploring belief systems, improving relationships, and safety planning.

Results: Of the 22 male participants recruited in an Australian Youth Justice Centre (YJC), 12 completed all aspects of the treatment program, reflecting a 46% completion rate for a population cohort which is typically challenging to engage. Results demonstrated significant improvements in the ability to store and retrieve information, recognise information, and control emotions. Planning and organising skills also showed considerable development.

Conclusions: This pilot study suggests that a combined CRT and SCRT group treatment program can be used effectively to target cognitive challenges associated with mental health disorders in young offenders in custody. These promising outcomes suggest benefits in exploring randomised controlled trials with increased cultural sensitivity for diverse populations.

Background

Young offenders (10 – 21 years) suffer high rates of mental health disorders worldwide (Marr et al., 2023; Singh et al., 2017; Whitney et al., 2022) and this is a contributing factor to high recidivism rates (Singh et al., 2017). In Australia, young people with mental health and/or intellectual disabilities are six times more likely to enter custody than those without impairment (Baldry et al., 2013; Marr et al., 2023). Exposure to risk factors such as adverse childhood experiences (e.g., neglect, domestic violence, and parental incarceration) and untreated neurodevelopmental and/or mental health conditions (e.g., ADHD, depression, and PTSD) are contributing factors before entering custody (Baetz et al., 2021; Marr et al., 2023).

While youth custodial centres are challenging environments for any young person, there are opportunities to facilitate access to education and health services during a period of incarceration (Farrington et al., 2012). Indeed, due to the complex range of social, family, health, educational, and economic challenges that characterise this group, there are significant barriers for young people in contact with the criminal justice system in accessing adequate mental health treatment (Farrington et al., 2012; Singh et al., 2017). These challenges are exacerbated for young people who have reduced cognitive capacity, underdeveloped emotional capacity, and limited vocabulary impacting on their capacity to communicate their needs and symptoms (Gill et al., 2023; Hopkins et al., 2016; Marr et al., 2023).

Mental illness experienced in young people during developmental periods critical for cognitive and social development (van Duin et al., 2019) are associated with longer term neurocognitive and social cognitive deficits (Couture et al., 2006; Mesholam-Gately et al., 2009). These deficits are often underestimated as important factors that reduce the capacity for a young person to complete important developmental tasks such as completing school. These deficits also limit the development of social skills and can significantly disadvantage

young offenders leaving custody and returning to an independent life in the community (Hajri et al., 2022; Himelstein et al., 2012; Penner et al., 2011). In turn, this can have a detrimental impact on employment, relationships, and educational outcomes, contributing to poorer life outcomes for young offenders.

Combining two separate treatment protocols, Cognitive Remediation Therapy (CRT) and Social Cognition Remediation Therapy (SCRT), has proven effective in enhancing cognitive performance for people with severe mental illness (Dark et al., 2018; Fernandez-Gonzalo et al., 2015; Harris et al., 2022; Lindenmayer et al., 2018; Vidarsdottir et al., 2019) and improving life outcomes for those with mental illness and/or cognitive impairment (Darmedru et al., 2017; Harvey & Sand, 2017; Isaac & Januel, 2016; Jones & Harvey, 2020; van Duin, 2019; Vita et al., 2021). Studies that combined CRT with rehabilitation programs (i.e., strategies to improve daily living skills) also showed functional improvements (Lindenmayer et al., 2018; McGurk et al., 2008; Wykes et al., 2011; Wykes et al., 2012), with individuals with fewer years of education, a lower premorbid intelligence quotient, and higher levels of symptomatology having a better response (Vita et al., 2021). Age is an influential factor in several studies, with younger participants demonstrating more significant improvements through learning cognitive skills (McGurk & Mueser, 2008; Radhakrishnan et al., 2016; Wykes et al., 2011; Wykes et al., 2012). In addition, the combination of CRT and SCRT treatments has been shown to decrease violent and aggressive behaviours by reducing impulsivity and targeting interpersonal relationships and social functioning (Darmedru et al., 2017; Jones & Harvey, 2020; O'Reilly et al., 2015).

Improving cognitive ability can enhance offender outcomes significantly (Ahmed et al., 2015; O'Reilly et al., 2019; Schwalbe & Medalia, 2007). Teaching cognitive skills to adults in prison has been shown to reduce recidivism by 20-30% (Bush, 2016). Similarly, results are favourable for social cognition treatment in a forensic setting (Combs et al., 2007;

Taylor et al., 2016; van der Stouwe et al., 2016). Programs targeting social-cognitive skills and thinking styles have been shown to be effective in the adult and youth forensic population (Cullen et al., 2012; Joy Tong & Farrington, 2006; Pullen, 1996). Despite the evidence for the effectiveness of cognitive and social remediation, there has been limited research into treatments explicitly targeting young people in custody experiencing mental health issues. Research into effective youth interventions has relied primarily on social learning approaches, psychoeducation with parents, cognitive behavioural therapy, and regulation skills development (Salekin, 2015; Underwood & Washington, 2016). A positive therapeutic alliance is correlated with a stronger response to cognitive remediation intervention among young people in custody (Pooley, 2020). Similarly, when a group experience reflects a "family-like" situation, where young people listen, accept, and support one another, a greater response to the group intervention is observed (Aronson & Kahn, 2004; Leader, 1991).

Aims of the School-Link Advantage pilot study

The pilot study aimed to explore the effectiveness and feasibility of a group treatment program for young people in custody with cognitive difficulties and/or mental health conditions. This was achieved by comparing participants' cognitive, social, and general functioning pre- and post-treatment.

We hypothesised that: (1) delivering this combined group treatment program will be feasible in the restrictive custodial environment and acceptable to the youth population experiencing mental health conditions; and (2) both neurocognition and social cognition will improve with the delivery of the combined treatment, and (3) participants will show improved functioning.

Study design

Participants

Participants were recruited from an Australian YJC between March 2021 and January 2023. All participants self-nominated for the study and had backgrounds of mental health and/or neurodevelopmental disorders. Each participant had four one-on-one meetings with group facilitators before the group treatment sessions commenced. These meetings covered (1) information on the treatment, (2) consent, (3) a 45-minute pre-assessment, and (4) feedback on the results of their pre-treatment assessments, including a discussion of treatment goals.

Inclusion criteria for the treatment program were (1) a diagnosis of a mental health condition, as recorded in the participant's clinical file by the Justice Health NSW consultant psychiatrist; (2) the presence of neurocognitive or social-cognitive deficits as measured by the research team; (3) a minimum length of incarceration ranging from 8 to 14 weeks; (4) ability to provide written consent (if under 16 years of age consent from a guardian was required); and (5) sufficient oral English skills. Exclusion criteria for the pilot study were a diagnosis of intellectual disability recorded in the participant's clinical file by the Justice Health NSW consultant psychiatrist; severe visual impairment; severe hearing impairment; and/or recipient of electroconvulsive therapy in the past six months.

All participants consented to their data being used to evaluate the treatment program. They were designated to groups of four and five and asked to attend 20 face-to-face group treatment sessions twice weekly over 10 weeks. Three groups ran during the pilot study.

Demographic information collected for the study included participants' age, gender, cultural background, mental health condition, identified brain injury, educational attainment, and relationship status. All participants and facilitators were offered the opportunity to discuss their perspectives on the project using a semi-structured interview. A thematic analysis was undertaken to examine their feedback, and this part of the study is the subject of a separate paper, in Chapter 5.

Clinical/medical supervision

Two youth mental health clinicians from our research team facilitated each 90-minute session. Clinical supervision was provided by a consultant psychiatrist, service manager, and the research team. It was planned for an Aboriginal support worker to be involved in the treatment sessions. However, this was only possible for Group 2 due to resourcing and availability.

All participants continued receiving their usual mental health and medical treatments while undertaking the group treatment program.

Group treatment program approach

The 10-week manualised group treatment program trialled in the pilot study used interpersonal learning, group cohesiveness, socialisation, and information sharing as therapeutic factors underpinning the combined treatments of CRT and SCRT (see Treatment manual at Appendix 1). The CRT intervention (using smart devices/iPads) aimed to improve participants' cognitive ability, such as increasing attention, memory, language, and executive functioning capacity. Due to the restrictions in custody, the applications/games were played without internet connectivity and were individually sourced. The SCRT intervention aimed to improve emotional recognition and generated group discussions about personal biases. Groups were closed and used interactive activities, skill-building and discussions about emotional recognition and regulation, executive functioning, values and beliefs, relationships, health and wellness and safety planning.

The CRT component used a drill and practice-plus strategy approach to enhance cognition. It incorporated goal setting related to real-life demands (e.g., schoolwork, relationships, and daily tasks) (van Duin, 2019), and covered practical life skills and thinking strategies for everyday living. This entailed strategies to improve self-awareness and resolve relationship dilemmas using the thought-feeling-behaviour cycle. Challenge tasks throughout

the program involved modules analogous to everyday tasks such as deciding on a mobile phone deal and debating ethical issues. The program was fluid, adapting to the needs of participants as required. Group facilitators used peer experiences to share and develop positive interpersonal skills. Participants were given a breakdown of their strengths and weaknesses based on their pre-intervention assessments, and individual goals were collaboratively set for them to work towards. The treatment manual utilised for this pilot study intervention can be accessed at Appendix 1.

Measures

For the pilot study, assessments were not blinded. Cognitive abilities were assessed using the following measures. All measures, except for Clinical Global Impression (CGI), were completed by participants pre- and post-intervention. The CGI was completed post-intervention only.

Rey Complex Figure Test and Recognition Trial (RCFT). The RCFT is a standardised and reliable cognitive ability test that measures working memory, attention, planning and visuospatial abilities (Meyers & Meyers, 1995). Age-corrected *t*- scores were analysed using the norms provided by Meyers and Meyers (1995).

Hinting Task (HT). The HT was used to measure theory of mind and assessed participants' capability to deduce the true intent of indirect communication (Corcoran et al., 1995).

Penn Emotion Recognition Task (ER-40). The ER-40 measured participants' facial emotional processing (Carter et al., 2009).

Behaviour Rating Inventory of Executive Functioning (BRIEF) Version 2 (Gioia et al., 2015) **or Adult** (Roth et al., 2005). To assess executive function, the study utilised the BRIEF-2 for participants 18 years and under and the BRIEF-A for those 19 years and above. Three subscales (Behaviour Regulation Index, Emotion Regulation Index, and Cognition

Regulation Index) and the Global Executive Composite (EC) were also calculated. The scores were converted into age-appropriate *t*-scores.

Personal and Social Performance Scale (PSP). The PSP was used to measure real-world functional performance, indexing the severity of participants' social and personal dysfunction (Patrick et al., 2009). The PSP was completed by support workers who rated participants across four domains: socially beneficial activities, personal and social relationships, self-care, and disturbing/aggressive behaviours.

Clinical Global Impression (CGI). The CGI was used to evaluate the severity of mental illness (Busner & Targum, 2007).

Sample size

The primary aim of the pilot study was to examine the effectiveness and feasibility of the group treatment program; therefore, a formal sample size calculation was not warranted. In spite of the global COVID-19 pandemic and associated public health measures and restrictions, the study was able to recruit 22 young offenders over the study period. This is considered to be sufficient to provide useful information about the effectiveness and feasibility of the group treatment program.

Data analysis

All data analysis was conducted using IBM SPSS Statistics (version 24.0, Armonk, NY: IBM Corp). Eighteen matched paired *t*-tests were used to compare pre- and post-assessment scores for the RCFT (i.e., IR, DR and RT scores), the HT, the ER-40, the BRIEF inhibition, self-monitoring, shift, emotion control, task completion, working memory, planning/organising scores, as well as the BRIEF Behaviour Regulation Index, Emotion Regulation Index, and Cognition Regulation Index, the BRIEF Global EC, and PSP and CGI scores. Effect sizes were calculated using Cohen's *d* (Cohen, 1988). Findings were not corrected for multiple comparisons. All data was deidentified and securely stored to ensure confidentiality of participant information throughout the study.

Ethics approval

Human Research Ethics Committee (HREC) approval was obtained from the Justice Health and Forensic Mental Health Network HREC (Reference 2019/EH13827), Aboriginal Health and Medical Research Council HREC (Reference 1629/20), and the Youth Justice New South Wales Ethics Committee (Reference D20/313). Informed written consent was obtained from all participants.

Results

Of the 22 participants, three were transferred to another site, one dropped out following COVID-19 lockdown restrictions, and six were released during COVID-19 restrictions, leaving 12 male participants who completed the treatment program (dropout rate = 54%). The 12 completing participants were males from 16 to 19 years of age (M = 17.40, SD = 1.14) who either had a conviction or were awaiting the outcome of an alleged offence. Justice Health NSW clinical notes identified participants diagnosed with the following mental health conditions: post-traumatic stress disorder (25%); attention deficit hyperactivity disorder (25%); autism (16%); depression (50%); anxiety (8%), and drug and alcohol misuse (58%). Brain injury had been experienced by 16.5% of participants.

All participants completing the program attended the on-site school and had achieved 9 to 12 years of schooling (M =10.75, SD = 0.82). Ten participants (83%) had various experiences working before entering custody. Five participants were of Anglo-Saxon background, three were Māori, two were Samoan (16.5%), and two were of Ghanaian (16.5%) family heritage. Three participants (25%) reported that they were in relationships.

Eighteen matched pre- and post-assessments were conducted for all measures of cognitive, social, and general functioning (see table 2 “Functional changes pre-and post-treatment assessment” in Supplementary material). The results showed that after completing the treatment program, participants’ ability to store and retrieve information (i.e., RCFT

Delay Recall), $t(11) = -3.65$, $p < .05$, $d = -.88$, 95%, *CI* [-18.71, -4.462], and ability to recognise information (i.e., RCFT Recognition Trial), $t(11) = -2.97$, $p < .05$, $d = -0.75$, 95% *CI* [-18.56, -2.77] significantly increased. Additionally, participants demonstrated a significant reduction in BRIEF emotion control scores, reflecting an improvement in emotional control across the study, t (11) = 573, $p < .05$, $d = 0.42$, 95% *CI* [0.70, 8.97]. Participants also demonstrated significant improvements in their planning and organising skills (i.e., BRIEF Plan/organise), t (11) = 296, $p < .05$, $d = 0.68$, 95% *CI* [0.31,14.53].

Discussion

The pilot study analysed the potential effectiveness of a combined CRT and SCRT group treatment program for young males with neurodevelopmental and/or mental health conditions in a youth custody setting. Results suggest the treatment produced a positive effect for participants with broad improvements in neurocognitive ability that were significant in the domains of information retrieval, information processing speed and emotion control.

Participants' ability to store, retrieve and recognise information showed significant improvements after the treatment program, as measured by the RCFT. This result was similar to the findings of Fisher et al. (2015), who demonstrated that combined treatments significantly improved memory skills in young people with schizophrenia. Memory skills improvement may help vulnerable young people to develop their capacity to learn and remember information (Hajri et al., 2022), and this can assist with vocational opportunities, help with reintegration into the community and reduce the likelihood of reoffending. Participants also showed a statistically significant change in emotion control. Learning to manage emotions supports young people to better cope with everyday life stressors and helps them to make constructive decisions and build relationships, reducing the risk of recidivism (Hodgkinson et al., 2021). Teaching emotional regulation to young people in detention has been shown to improve wellbeing and reduce challenging behaviour (van der Stouwe et al.,

2016). Participants also demonstrated significant improvements in their ability to plan and organise. This skill helps in planning day-to-day activities, achieving life goals, and managing time more effectively (Hajri et al., 2022). These positive cognitive changes demonstrate the feasibility of the treatment program in the custodial setting for these young male participants.

The study failed to observe any changes in social cognition. This has also been found in several other studies that combined CRT with SCRT (Harris et al., 2022). However, the effect sizes found matched those observed in other studies (Nijman et al., 2020), likely reflecting the underpowered nature of the pilot study (see small sample size discussed below) and the effects of COVID-19 on recruitment.

Limitations

Several limitations of the pilot study are noted. First, the small sample size affected the generalisability and reliability of our results. This was compounded by the effects of COVID-19, which shut the centre down for extended periods during the research study. Second, the findings were not corrected for multiple comparisons, increasing the risk of Type 1 errors, where statistically significant results may occur by chance due to the increased number of statistical tests conducted. For this reason, some caution is advised in interpreting the significance of participant findings. Third, group facilitators were also part of the research team, which could have led to researcher bias when scoring the CGI. However, having facilitators as part of the research team was also a strength, as this gave them access to participants' psychological histories, allowing them to guide the group with a more trauma-informed approach. Fourth, the support workers had difficulties completing the BRIEF and PSP measures due to either limited knowledge of the participant or insufficient time. The environment of the YJC also imposed some challenges to participant attendance and

completion rates, including staff availability and the need to transfer participants to other custodial facilities.

A fifth limitation was that only a small number of Aboriginal participants enrolled in the study, limiting the generalisability of results to Aboriginal young people. This is particularly significant, given the disproportionately high numbers of this cohort in detention. The high dropout rate for potential Aboriginal participants occurred primarily during the consent process of the first meeting, suggesting that further cultural support is required during the recruitment and facilitation phases of future iterations of the program.

Conclusions

Overall, the pilot study has demonstrated that improving the social and thinking skills of young people in custody who are also dealing with cognitive and/or mental health issues is feasible. These promising results suggest that, if widely adopted, the program has the potential to provide much-needed improvements in functional and mental health-related outcomes for such young people. Future studies could focus on assessing the group treatment program on a broader scale, for example, with larger and more diverse samples in a randomised controlled trial with appropriate blinding of assessors. Additionally, increased accessibility to Aboriginal young people could be achieved by integrating more culturally appropriate elements into the promotion and recruitment phases.

Authorship and acknowledgements

Authors' contributions

The overall study and its design were devised by RJ, AH and RB. RJ performed the data collection. RJ, AH and JE performed the statistical analysis. RJ drafted the manuscript which was reviewed by DT, AH and RB. All authors approved the final draft.

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Availability of data and materials

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

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Seqirus and Servier. He has participated in steering committees for Seqirus and Lundbeck Australia. He is also the chair of One Door Mental Health.

Ethics approval and consent to participate

This study was undertaken in accordance with the National Statement on Ethical Conduct in Human Research 2007 (updated 2018), a statement of ethical principles for research involving human participants in Australia which is underpinned by the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Supplementary material
Table 2
Functional changes pre- and post-treatment assessment

Clinical Measurement	Pre-treatment Mean	Post-treatment Mean	*t*-value	Cohen's *d*	No. of participants showing improvement (of 12)
RCFT					
Immediate Recall	32.33 (14.01)	38.42 (15.99)	-1.52	-0.40	6
Delay Recall	30.33 (11.30)	42.00 (14.97)	-3.65**	-0.88	10
Recognition Trial	38.00 (12.59)	48.67 (15.75)	-2.97*	-0.75	8
HT	12.67 (4.20)	14.67 (2.46)	-2.12	-0.58	9
ER-40	34.83 (2.29)	34.92 (2.64)	-0.15	-0.03	6
BRIEF					
Inhibition	59.33 (2.13)	56.42 (6.84)	0.93	0.29	3
Self-monitoring	61.25 (13.29)	54.83 (11.35)	1.61	0.52	8
Shift	64.33 (10.05)	59.50 (9.51)	1.90	0.49	7
Emotion control	56.08 (11.46)	51.25 (11.16)	2.57*	0.42	8
Task completion	61.00 (7.68)	55.83 (14.50)	1.71	0.44	8
Working memory	63.83 (8.38)	59.33 (12.19)	1.45	0.43	9
Plan/organise	63.33 (11.08)	55.92 (10.71)	2.30*	0.68	10
Behaviour Regulation Index	60.33 (11.64)	56.00 (7.92))	1.62	0.43	7
Emotion Regulation Index	60.13 (12.69)	56.25 (11.76)	1.87	0.39	7
Cognition Regulation Index	61.67 (10.49)	56.67 (12.22)	1.59	0.44	7
Global EC	61.67 (10.68)	56.83 (10.71)	1.77	0.45	8
PSP	71.78 (14.36)	67.70 (23.43)	1.08	0.20	2
CGI	3.00 (0.81)	2.69 (0.85)	0.84	0.37	7

Note: *p<.05; **p<.01; ***p<.001; RCFT = Rey Complex Figure Test and Recognition Trial; HT = Hinting Task; ER-40 = Penn Emotion Recognition Task; BRIEF = Behaviour Rating Inventory of Executive Functioning; Global EC= Global Executive Composite; PSP= Personal and Social Performance Scale; CGI= Clinical Global Impression.

CHAPTER FOUR: Qualitative data analysis

Introduction

This study is currently undergoing peer review for publication in the journal, *Psychiatry, Psychology and Law Journal*. We acknowledge the technical assistance of Aspasia Karageorge, Brain and Mind Centre, University of Sydney, and Jeanne Wang, Justice Health NSW, in the support of the thematic analyses reported in this chapter.

Youth Offenders and their experience in a specialised group treatment program: a qualitative study

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Abstract

Background: Limited research exits on the effectiveness of therapies in changing cognitive and emotional development, especially for young offenders dealing with mental health conditions. This qualitative study aims to explore the experiences of young male offenders in an innovative social and cognitive remediation group treatment program and assess the suitability this program for wider implementation.

Methods: A semi-structured group interview was conducted after the end of each program to explore participant experiences. Thematic analysis identified themes and sub-themes in the de-identified data, as part of a broader pilot study trialling a 10-week group treatment program that integrated Cognitive Remediation Therapy (CRT) and Social Cognition Remediation Therapy (SCRT).

Results: Analysis of the interviews identified two main themes: (1) *self and functional development*, and (2) *need for belonging, connection and clear, consistent structure*. Sub-themes within these broader themes, highlighted specific aspects of the group experience contributing to an understanding of the acceptability, perceived effectiveness, and extent of positive change.

Conclusion: This qualitative study revealed the group treatment program effectively improved self-development and connectedness in participants. Combining CRT and SCRT treatments proved acceptable and beneficial in equipping participants with cognitive and social development linked to enhanced regulation, decision-making, pro-social behaviours, and social connectedness. Further exploration of the program's effectiveness in custody settings is warranted.

Background

Cognitive and emotional development challenges faced by young offenders mean that they might not fully comprehend the consequences of their actions (McDiarmid, 2013). It is widely acknowledged that young offenders require very different, and more specialised, treatment within the criminal justice system compared to adults (Farrington et al., 2012; McDiarmid, 2013). In Australia, starting from the age of 10, criminal law aligns with societal expectations by requiring young people to take responsibility for their actions (Haysom, 2022; Tuomi & Moritz, 2023). The age of criminal responsibility, although currently the subject of some debate, was theoretically determined with consideration given to the appropriate developmental age at which to hold children and young people accountable for their actions (Elliott, 2011). Investing in rehabilitation treatments that address the social and cognitive needs of young offenders could help minimise youth recidivism (Keefe et al., 2013; Tchanturia et al., 2017).

Criminality and mental health

Mental health is an important factor in understanding the criminal behaviour of young offenders (Haysom et al., 2023; Underwood & Washington, 2016). They often present with comorbid mental health disorders and neurodevelopmental disorders and have higher rates of substance use disorder (Haysom et al., 2023; Justice Health Forensic Mental Health Network & Juvenile Justice NSW, 2017; Marr et al., 2023).

Mental health conditions can impact on an individual's socio-emotional capability and executive functioning (Danielson et al., 2021; Farrington et al., 2012; Simpson et al., 2018). These deficits commonly manifest in a range of behaviours, such as: poor decision-making and impulse control; difficulty identifying and managing feelings; negative impacts on prosocial activities and peer relationships; and problems managing frustration and conflict (Haysom et al., 2023; Marr et al., 2023; Papadopoulou et al., 2014). Such deficits can lead to

poor motivation and lack of engagement with learning, resulting in a high risk of disengaging from school. Young people facing such issues are also more vulnerable to engaging in and pursuing antisocial activities (Fitzpatrick et al., 2020; Gettinger et al., 2012). In combination, these factors contribute to poor life outcomes for young offenders with cognitive and social deficits (Farrington et al., 2012). Early intervention and targeted mental health supports are important in addressing the cycle of mental health issues and criminality (Haysom et al., 2023). However, limited evidence is available regarding the effectiveness of treatment provided to young offenders (Garrido & Morales, 2007; Koehler et al., 2013; O'Brien et al., 2016; Trotter et al., 2017).

Early intervention

Adolescence is a critical stage in both cognitive and social development (Avenevoli et al., 2008; Dooley & Fitzgerald, 2012; Kessler et al., 2005). Evidence suggests that intervention during adolescence reduces functional impairments associated with mental disorders and helps foster better life outcomes in adulthood (McGorry et al., 2011; Underwood & Washington, 2016; van Duin, 2019). Psychosocial interventions targeting skills and social experiences at an early stage can produce long-lasting changes for young people experiencing disruptive behaviour disorders (Dodge et al., 2015). Interventions that employ tools to maximise engagement and teach skills that can be applied to real life experiences also help to develop resilience and wellbeing (Kobau et al., 2011; Price et al., 2014) for this cohort.

The custodial setting is not conducive to the treatment and recovery of mental illness, however it offers a potential avenue for treatment (Haysom et al., 2023). In a youth custodial centre, treatments are made available for young people with substance use problems, a significant benefit emerged. This setting provided an environment suitable for young offenders to recover from active drug and alcohol use, making them more receptive to

learning and rehabilitation (Haysom et al., 2023; Underwood & Washington, 2016). Despite the restrictive setting, the custodial environment offers an opportunity to have a transformative influence on young offenders (Haysom et al., 2023), allowing them to develop insights and learn life skills that have previously not been made available to them (Fitzpatrick et al., 2020; Gettinger et al., 2012). In addition, engaging in supportive and empathetic discussions with custodial staff and therapists has been shown to foster a positive environment, producing positive responses from young offenders (Trotter et al., 2017).

Access to a safe environment and the provision of appropriate interventions allows young offenders to connect and engage (Ford & Blaustein, 2013). Developmentally, young people are looking for social connections with their peers (Leader, 1991). Enabling peer connection for young offenders in a safe group format within the custodial setting will allow them to relate to others and feel a sense of belonging. This feeling of belonging, developed through group intervention, has been demonstrated to decrease the sense of aloneness or isolation and enhance levels of engagement (Aronson & Kahn, 2004). The group experience also promotes an opportunity for positive emotional experiences and interpersonal development (MacKay et al., 2007; O'Brien et al., 2016; Richards et al., 2019; Truneckova & Viney, 2007).

Cognitive and Social Cognition Remediation Therapy

Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) were seen as effective in improving life outcomes (Darmedru et al., 2017; Fisher et al., 2015; Isaac & Januel, 2016; van Duin, 2019; Vita et al., 2021). Studies also showed that combining CRT and SCRT decreased violent and aggressive behaviours by reducing impulsiveness and targeting enhanced interpersonal relationships and improved social functioning (Darmedru et al., 2017; Jones & Harvey, 2020). It is proposed that an intervention combining CRT and SCRT in a group treatment program may also benefit young

offenders by allowing them to develop skills and feel connected through the group experience, helping them to develop strategies for real world functioning.

Aims

This qualitative study aimed to explore the group experience by analysing responses at the conclusion of each treatment session, providing insights into the effectiveness of a treatment program in a custodial setting.

Methodology

Settings

The study was conducted within a Youth Justice Centre (YJC) in New South Wales.

Participants

Young people within the YJC were identified as potential participants of the treatment program, and written consent was obtained.

All participants self-nominated for the study and had backgrounds of mental illness and/or neurodevelopmental disorder. All participants recruited took part in one-on-one meetings with group facilitators for four individual meetings before the group treatment sessions commenced and fully briefed on the requirements of the study.

Ethics approval

Human Research Ethics Committee (HREC) approval was obtained from the Justice Health NSW (formerly Justice Health and Forensic Mental Health Network) HREC (Reference 2019/EH13827), Aboriginal Health and Medical Research Council HREC (Reference 1629/20) and Youth Justice NSW Ethics Committee (Reference D20/313). Informed written consent was obtained from all participants.

Data collection and analysis

The facilitators completed a semi-structured interview at the end of each group treatment program, with group discussion guided by asking the following questions: (1) What

was helpful? (2) What wasn't helpful? (3) Name the top three favourite activities. (4) What activities didn't you like? and (5) Was there anything else you would like to cover/add to the program? (see Template Questions at Appendix 4). Due to restrictions on making audio or video recordings in custody, both facilitators wrote down the responses and cross-checked them to ensure they were accurately recorded. All data collected was de-identified.

Analytic method

Two members of the research team collaborated to analyse this qualitative data using Braun and Clarke's reflexive thematic analysis (Braun & Clarke, 2006, 2019; Clarke & Braun, 2021). Overarching themes were identified from the data using an inductive thematic analysis approach. The focus was on participants' feedback regarding the program's strengths and weaknesses. This produced some meaningful insight in the conduct of the treatment program. The analysis followed the six stages of reflexive thematic analysis: (1) familiarisation; (2) coding; (3) producing preliminary themes; (4) evolving and reviewing themes; (5) filtering, defining and naming themes; and (6) write up (Clarke & Braun, 2021). In a recursive manner of constant comparison, the deidentified written notes were read, coded, compared to one another and re-coded. This information was categorised into a table format to construct themes and sub-themes responding to the research aims. Given the small sample size and handwritten nature of the notes, computer software was not required.

Results

Twelve male participants completed the SLA pilot study group treatment program facilitated at a youth custodial setting. Participants were between 16 to 19 years of age. Of the twelve completing the program, eleven attended at least 80% or more of the treatment sessions. Three further participants were unable to complete the program due to moving between custodial centres, one because of a competing program, and one declining to continue after interruptions from COVID-19. The Group 2 treatment program was cancelled

due to COVID-19 for the remaining six participants. COVID-19 impacted Groups 3 and 4 by extending timeframes. Group 1 maintained five participants with no disruptions.

Using the inductive thematic analysis of the qualitative data (as outlined above), two broad themes were established. Thes were (1) Self and functional development, and (2) Need for belonging, connection and clear, consistent structure. The thematic analysis broke these two themes into associated sub-themes, as described in the following.

Theme 1: Self and functional development

1.1 Applying skill development through learning, practice, and self-reflection. Group participants portrayed changes to both executive functioning and social skills development, with skill sets working together to improve overall functioning. They described improvements in "concentration," "listening," and "focus" skills. This reflects learning based on the executive functioning strategies taught throughout the treatment program. Furthermore, they described the treatment program provided them with new social skills later practised outside of the group. Participants described self-reflection as an important way they could apply and refine problem-solving skills, for example applying these skills to understand the cause of and respond to relationship breakdowns. Participants described having greater confidence in critical reflection using strategies such as listening, validating feelings, and checking on the facts of a situation. Participants also described "problem solving" as a strategy that they could imagine as helpful for future personal growth.

1.2 Action for change. Participant feedback emphasised how the social cognitive training in the treatment program offered the opportunity to change and achieve more positive life outcomes. Participants described in particular the practical utility of the treatment program, emphasing how it was helpful when exploring scenarios, such as "what you would do?" and "to think how to act". They found value in learning how to handle "real situations," avoid "jumping the gun," understand "the other person's emotions," and develop

skills in “learning to control what’s going on [in] your mind”. Participants identified critical thinking, discussion, and practical application of social cognitive skills as things that would help them process everyday social experiences. The participants spoke of the benefits of understanding social bias, using fact-checking processes and reflecting on other people’s emotions rather than focusing on their dysregulation. Participants described developing these attributes as “life skills for [their] future”.

1.3 Connection with others. Participants described the group process as allowing them to share their experiences, listen, and connect to others outside their usual peer group. They reflected that they “got to be closer to others” and reported “making more friends,” and “relating.” Their feedback highlighted the importance of the group process, in addition to the content of session activities, and the impact of using real-life situations in group activities as showing them better ways to interact with other people. Participants said the skills they learned influenced their empathy by helping them to understand “others’ emotions,” the benefits of collaboration, and the importance of building trust when undertaking group activities.

1.4 Experience in group. Participants saw the group experience as an important element of the treatment program. The treatment program was described as “fun”, and the participants “learned new skills” and “enjoyed the challenges”. They also reported that “it was relaxing” that they were “learning how to relax” and that the sessions did “not [spend] too long on topics”. The experiential learning described by participants allowed them to increase their knowledge, develop new skills, and build insight.

1.5 Drive to participate: challenging and diverse activities. When questioned about motivation to continue participation in the treatment program, participants cited most of the group activities undertaken. Participants gave feedback about the design of the activities, as

being creative, diverse, and challenging. Participants liked the activities which involved moving around the room to maintain focus and concentration, and activities involving practical elements of the program such as acting out a relationship scenario or job interview. They described the activities as "fun" and perceived the incorporation of movement for activities as enjoyable. Feedback showed that including indirect strategies to assist with the learning process was also viewed favourably, as was allowing time for collaboration with other participants and acknowledging participant achievement, both from facilitators and other participants.

Theme 2: Need for safe space, connection, and clear, consistent structure

2.1 Desire for sensitivity to, and adjustment for, the various needs of individuals within the group. The participants said that they wanted the treatment program to be individualised and responsive to their needs and learning styles. For example, participants preferred to talk through their reflections rather than completing worksheets. They highlighted "discussion" and "being able [to] communicate" as important factors in the program. Talking through their reflections with the facilitators and/or as a group allowed conversation and connections to build. The participants felt it was important that the activities were "practical". Participants described the activities as "varied" and related to self and life development goals such as relationships, perspective-taking and self-accountability.

2.2 Regularity and knowing what to expect. Most participants described using the iPads in the cognitive remediation part of the treatment program as "fun". They reported "being able to play consistently" (i.e., playing games at the same time each session). There was a clear understanding and knowledge about the structure of the sessions and each session started with participants playing set games on the iPad. Participants described that knowing what to expect gave them autonomy to engage immediately as soon as they joined the session, creating a safe space to connect to in the moment and allowing them to self-regulate

before starting the self-reflection and group discussions later in the session. Participants also reflected that the time of day the sessions were held was important, preferring mid-morning to midday.

2.3 Sense of safe space. Many participants asked for the treatment program to continue after they graduated from the 10-week treatment program. Participants enjoyed the space for conversation, relationships, mind growth activities, and developing friendships with other participants. Their willingness to share their thoughts and feelings without fear of judgement was observed. The participants actively discussed activities, expressing their preferences for those offering choices and options.

Discussion

Our study explored the experiences of young males with mental health disorders and neurodevelopmental disorders participating in a combined CRT and SCRT group treatment program within a youth custodial setting. The results offered valuable insights into the effectiveness and challenges of such interventions. Including a youth perspective was a critical step in the design and the decision-making process for this treatment program (Heffernan et al., 2017). The results provided promising initial support for the therapeutic effect of this program at a crucial timepoint for young offenders.

Need for support in self and functional development

This first theme which emerged through our thematic analysis of the qualitative data (see Results above) encapsulated the positive impact of the combined CRT and SCRT program on participants' cognitive and social skills. Participants highlighted the program's role in developing their understanding of other people's perspectives and feelings, enhancing problem-solving abilities, and demonstrating the need for critical reflection. These findings indicated the treatment program's contribution to the development of essential life skills for future personal growth. This supported other findings that targeting specific real-world

difficulties, as facilitated by CRT, could enhance overall functioning (Darmedru et al., 2017; van Duin et al., 2019).

This broad theme emphasised the real-life practical applicability of the intervention, indicating its effectiveness. The treatment program equipped young people with valuable skills to navigate various critical cognitive and social scenarios. This included managing emotions, developing thinking skills and building positive relationships. Feedback from participants highlighted the value of having a treatment program that combines cognitive and social cognitive skills. This interdependency is seen in the strong relationship between theory of mind and executive functioning (Bradford et al., 2015). Using real-life scenarios enhances critical thinking and demonstrates the importance of developing these skills as being important in daily life (Semilarski et al., 2021). Critical thinking, together with problem-solving and understanding a different perspective, are essential skills that have the potential to enable young offenders to develop and benefit from an open and flexible way of thinking.

Participants expressed a preference for discussing their reflections rather than completing worksheets, highlighting the importance of group discussion within the program. This preference aligned with existing literature on the experience of young offenders, suggesting that programs were more successful when they involved building connections and were supported by staff focusing on skill development, problem-solving and helping with practical problems (Campbell et al., 2014; Heffernan et al., 2017). The challenges young offenders faced were associated with their social and emotional needs in seeking support, developing relationships, and achieving self-growth, especially during the transition to adulthood (Sapiro & Ward, 2020). This program fostered the connections between participants, enabling them to share experiences, build empathy, and collaborate effectively. The importance of group dynamics played a pivotal role, allowing participants to relate to

others outside their usual peer group and develop meaningful connections (Aronson & Kahn, 2004). Moreover, the supportive environment facilitated skills development in a creative manner that participants found fun and relaxing. The program boosted participant confidence and self-esteem; both of which are essential for long-term social reintegration and personal development.

The challenge and diversity presented in the activities run throughout this program proved to be significant motivators for participation. Activities were engaging and varied, tailored to individual needs, and learning styles, contributing to sustained interest and active engagement. Positive feedback from participants indicated the importance of incorporating creative and challenging elements into such interventions to enhance motivation and enthusiasm. The existing literature emphasises the need for a dynamic and adaptable approach when working with young people (Heffernan et al., 2017; Izydorczyk & Niziołek, 2010). This flexibility is essential to accommodate the wide range of cognitive and emotional abilities within the participant cohort. The activities for this study treatment program were designed with the knowledge that the “one size fits all approach” is not suitable and that diverse therapeutic techniques are required, particularly in this setting.

Facilitating a supportive environment

The second broad theme emerging from the analysis of the qualitative results was the need for belonging, connection and clear consistent structure. Responses related to this broad theme showed the importance of individualised, practical, and structured program content in enhancing the participant experience. The group treatment program delivered personal development through the exploration of interpersonal strengths and areas for improvement, as well as the acquisition of conflict-resolution and communication skills (Javadi et al., 2019; O'Brien et al., 2016). Participants also emphasised the value of group discussion and

communication, indicating a preference for program elements with a dialogical or practical focus (Richards et al., 2019). The results of the SLA pilot study reflect the importance of understanding and meeting the diverse needs of the young offenders participating in the treatment program. The adaptability fostered a sense of belonging, enhancing the learning and the group experience. Moreover, the regularity and predictability of the program, including the use of iPads, helped create a secure environment and facilitated self-regulation. Participants reported that knowing what to expect enabled them to engage more effectively.

Participants also sought program individualisation to enhance their sense of connection, highlighting the need for the facilitators to adapt program content to the participants' learning styles and preferences, as emphasised in the literature (O'Brien et al., 2016; Richards et al., 2019). This "supported connectedness", which can come from peers, family members, mentors, or helping professionals, can help with personal growth, development, and getting back into social life (Heffernan et al., 2017; Sapiro & Ward, 2020), and this was the approach implemented in this group treatment program. The benefits of a shared experience are enhanced empathy, the reduced stigma of mental health treatment, and self-validation and peer support (Sapiro & Ward, 2020).

Our findings underscored the importance of structure, routine, and the need for programs to be sensitive to individual preferences, enhancing the overall participant experience.

Strengths

The treatment program was conducted in a youth custodial environment, with young male offenders with cognitive and/or mental health deficits participating. Operating in this setting required substantial support from both internal management and external stakeholders. The research team worked collaboratively across Youth Justice NSW, Justice Health NSW,

and the NSW Department of Education to establish strong relationships and effectively advocate for, oversee, and conduct the treatment program. These collaborations strengthened the design and implementation of the program.

Another advantage was that the group facilitators presenting the treatment sessions also conducted both the pre-and post-treatment assessments, thus developing stronger relationships with the individual participants. This improved capacity for facilitators to have an improved clinical understanding of each participant, particularly important in young people with prior exposure to trauma.

Limitations

The small sample size in the pilot study restricts our ability to draw broad conclusions from this study, and caution should be exercised in assuming applicability to a broader or different population. Given that the researchers also served as group facilitators and conducted both pre- and post-treatment assessments, there was a potential for interviewer or participant bias. Participants might have felt inclined to offer responses they believed aligned with the researchers' expectations, introducing the possibility of social desirability bias. This suggests that their response may have been influenced, rather than expressing their genuine opinions or experiences. However, employing different group facilitators and assessors was not possible due to resource limitations. As noted, this limitation also proved to be a strength, with arguably stronger relationships between clinicians and participants enhancing the delivery of the treatment program. Another resource limitation was constrained access to culturally appropriate facilitators. With only one group facilitator being of Australian Aboriginal heritage, it was difficult to have support for all Indigenous young offenders who may have wanted to participate. This limitation could have influenced the engagement and experience of potential participants who might not have felt fully understood or culturally supported within the program. The lack of diverse representation among facilitators may have

affected the effectiveness of the intervention, particularly in addressing the unique needs and perspective of Indigenous participants.

Future studies

One suggestion from an onsite Aboriginal support worker was to facilitate part of the treatment program outside in the open air, in a more natural setting. For example, this could work well for the bridging and social cognition components. Growing evidence suggested providing an interactive and calming setting would be conducive to this treatment program (Lane & Reed, 2023), especially for individuals in restrictive environments.

Another suggestion from participants was to maintain connections with fellow participants after completing the program. This could be done through maintenance sessions which would also be a forum to undertake further group activities and allow participants to develop areas of interest and reinforce strategies and skills established throughout the treatment program. However, this is difficult within a custodial setting with frequent transfers and releases.

Lastly, it would be beneficial to conduct larger studies involving different facilitators, other sites, and more participants. This would improve applicability of results to a broader population group and improve understanding around site specific challenges and opportunities.

Conclusion

This study offers valuable insights into the experiences of young males with mental health and neurodevelopmental disorders in custody participating in a combined CRT and SCRT treatment program. The pilot study demonstrated a high level of acceptability of this specific treatment program among the participants and indicated that the delivery of the treatment program in a youth custody setting is feasible. More generally, the qualitative feedback can be used to inform the development of more effective and participant-centered

interventions within the youth justice system, ultimately contributing to rehabilitation, personal growth, and better life outcomes for young offenders.

Declaration of conflicts of interest

Author A Rene Jones has no declared no conflict of interest. Author B Jeanne Wang has no declared no conflict of interest. Author C Peter Malouf has no declared no conflict of interest. Author D Daniel Talbot has no declared no conflict of interest. Author E Aspasia Karageorge has no declared no conflict of interest. Author F Richard Baker has no declared no conflict of interest.

The authors declare that the pilot study received financial support from the NSW Ministry of Health and that this posed no conflict of interest.

Author G Prof. Harris has received financial support from the Australian Research Council, the National Health and Medical Research Council and the Medical Research Future Fund. He participated in pharmaceutical industry funded research with funding from Alto Neuroscience and Takeda Pharmaceuticals. He provided educational activities for Lundbeck Australia, Seqirus and Servier. He has participated in steering committees for Seqirus and Lundbeck Australia. He is also the chair of One Door Mental Health.

Ethics approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Human Research Ethics Committee (HREC) and approval was obtained from the Justice Health NSW (formerly Justice Health and Forensic Mental Health Network) HREC (Reference 2019/EH13827), Aboriginal Health and Medical Research Council HREC (Reference 1629/20) and Youth Justice NSW Ethics Committee (Reference D20/313)) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

The pilot study received ethics approval from the Justice Health NSW Human Research Ethics Committee, the Aboriginal Health and Medical Research Council Ethics Committee and the Youth Justice NSW Research and Evaluation Steering Committee in August 2020.

The participants receive information on the study verbally and in written form. Written informed consent is obtained from each participant before inclusion in the study. It is emphasised that participation in the pilot study is voluntary and that participants can withdraw consent at any time without consequences for treatment possibilities.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Author contributions

The overall study and its design were devised by RJ, AH, PM, and RB. RJ performed the data collection. RJ and JW performed the thematic analysis. RJ drafted the manuscript reviewed by DT, AH, PM, AK and RB. All authors approved the final draft.

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Data availability

The data used is de-identified and confidential.

CHAPTER FIVE: Feasibility and acceptability

Introduction

Assessing the feasibility and acceptability of the SLA treatment program is essential for understanding the potential impact of the program and informing future interventions. Examining these factors gives valuable insight into the practicality and effectiveness of implementing this intervention within a youth custodial setting.

Examining the feasibility of a group treatment using Neurocognitive and Social Cognition Remediation for young offenders -- The Justice Health NSW School-Link Advantage pilot study

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Abstract

Background: The School-Link Advantage (SLA) pilot study aimed to fill critical gaps in understanding the feasibility and acceptability of mental health interventions for young offenders in custodial settings. By exploring the acceptability of a combined Cognitive Remediation Therapy (CRT) and Social Cognition Remediation Therapy (SCRT) program, the pilot study explored the need for tailored intervention to build skills to combat the neurocognitive and social cognitive impairments associated with mental health and neurodevelopmental disorders in young people.

Method: Young men (aged 16-21years) in a custodial setting were invited to engage in bi-weekly group sessions with combined CRT and SCRT over 10 weeks. Recruitment and retention rate measures, and participant and staff surveys were used to assess the feasibility and acceptability of the treatment program.

Results: Sixty-five young male offenders were invited to be included in the study, with 22 consenting to participate. Due to custodial arrangements, only 12 young offenders completed the treatment program. Participants and support workers rated the program positively, with 91.6% of the 12 participants completing 80% or more of the sessions.

Conclusion: The high retention rate indicated the feasibility and acceptability of running the SLA treatment program within a custodial setting. Future studies would be strengthened by using facilitators from diverse cultural backgrounds. Optimal intervention rate (i.e., frequency and timing of sessions) and duration also require further exploration. This research will inform future treatment programs in the custodial environment and policies aimed at improving outcomes for young offenders and reducing recidivism rates.

Background

The cost of incarceration for young offenders in Australia is approximately $2,518AUD per person per day (Haysom et al., 2023). On average, approximately 819 young offenders are incarcerated across Australian Youth Justice Centres (YJCs) every day. However, relying solely on incarceration has proven ineffective in reducing recidivism among this demographic. The impacts of youth offending are more significant when compounded by the fact that this behaviour often persists into adulthood (Kinner et al., 2014; Rowlands et al., 2020; Sapiro & Ward, 2020).

Individuals who reoffend, particularly through violent crimes, often have significant cognitive and social impairments (Rowlands et al., 2020). Many young offenders experience difficulties making decisions, have poor impulse control, struggle with recognising and managing emotions, and have difficulties engaging in prosocial activities and forming positive peer relationships (Haysom et al., 2023; Kim et al., 2018; Marr et al., 2023; Papadopoulou et al., 2014). These are all factors which might perpetuate criminal behaviour and limit prospective social and occupational opportunities.

The prevalence of mental health and neurodevelopmental disorders among young offenders is 70%-90% higher than rates observed in the general population (Gagnon et al., 2022; Stewart et al., 2023; Tadros, 2021; Usher et al., 2019). The lifelong impact of mental health and neurodevelopmental disorders on young offenders is high, affecting their educational attainment and social functioning (Haysom et al., 2023; Marr et al., 2023; Papadopoulou et al., 2014), as well as reducing their income prospects and presenting them with continuing health challenges affecting individuals, families and communities (Kinner et al., 2014; Rowlands et al., 2020; Sapiro & Ward, 2020). There is some evidence that impaired executive functioning in young males before entering custody coincides with an

increase in the risk of recidivism for those with conduct disorder (Rowlands et al., 2020), and ADHD (Himelstein et al., 2012; Penner et al., 2011). Young offenders also commonly lack empathy and ToM abilities (Rowlands et al., 2020). Many young offenders are diagnosed for the first time with a mental health disorder only once they are in custody (Ikonomopoulos et al., 2015; Singh et al., 2017).

Altering this trajectory through intervention programs for young offenders presents a logical approach to addressing this complex issue. Fortunately, early intervention has shown promising results in reducing recidivism and alleviating the long-term societal costs associated with youth crime (Dodge et al., 2015). Introducing interventions at an early stage that target neurocognitive and social cognitive impairments has the potential to initiate enduring positive changes for young offenders (Dodge et al., 2015). This type of intervention can lead to significant improvements in functioning and reduce the likelihood of future reoffending (Avenevoli et al., 2008; Borschmann et al., 2020; Dooley & Fitzgerald, 2012).

Intervention programs for young offenders

Research on the effectiveness of mental health treatment programs for young offenders in custody is limited, with high dropout rates and reoffending behaviours posing significant challenges (Gagnon et al., 2022; Rowlands et al., 2020; Simpson et al., 2018). Determining who should receive treatment and what program type is appropriate remain contentious issues (Hein et al., 2020; Penner et al., 2011). Challenges such as obtaining consent, dealing with external disruptions, staff limitations, and transfer issues hinder program implementation, contributing to retention difficulties and dropout rates (Simpson et al., 2018).

Effective treatment programs need to focus on building skills tailored to individual needs, rather than solely addressing risk factors, to improve overall wellbeing and reduce recidivism rates in the longer term (Dwyer & Oostermeijer, 2022; O'Brien et al., 2016;

Stewart et al., 2023). A shift in focus from simply reducing reoffending to building strategies to enhance prosocial activities and lifestyle choices for young offenders can yield positive long-term outcomes (Javadi et al., 2019; Serie et al., 2023). Enhancing neurocognitive and social cognitive abilities may empower young offenders to better engage with educational and vocational rehabilitation programs, thus promoting improved decision-making and adaptive behaviour within the community (Rowlands et al., 2020). Such behavioural changes may also cultivate positive life outlooks, offering additional advantages such as enhanced wellbeing.

Programs that enhance social-cognitive skills and thinking styles have demonstrated effectiveness among adult and youth forensic populations (Cullen et al., 2012; Joy Tong & Farrington, 2006; Pullen, 1996). Among the general population, several studies have shown promising outcomes regarding the cognitive and emotional development of young individuals undergoing treatment using Cognitive Remediation Therapy (CRT) in combination with Social Cognition Remediation Therapy (SCRT) (Dark et al., 2018; Darmedru et al., 2017; Hajri et al., 2022; Harris et al., 2022; Nijman et al., 2020; Vidarsdottir et al., 2019). One study suggested combining the Neuropsychological Educational Approach to Remediation program (NEAR) (Medalia et al., 2017), which focuses on CRT, with Social Cognitive Interaction Training (SCIT) (Roberts et al., 2004) which targets social cognition, and suggested that this combined approach may lead to improvements in independent living for young people in the community (Harris et al., 2022). Offering this combined treatment program in a group format allows young offenders to practise interpersonal skills, explore issues relating to their impairments, and develop skills to manage conflict and communicate effectively (O'Brien et al., 2016).

Although community settings are recognised as helpful in enhancing mental illness recovery, there is a unique opportunity for mental health intervention to be provided in the

youth custodial setting (Haysom et al., 2023). Given the limited research, a pilot study was designed to determine the feasibility and acceptability of running a combined CRT and SCRT group treatment program in a youth custodial setting. The School-Link Advantage (SLA) pilot study was initiated to explore the relationship between neurocognition, social cognition and functional outcomes in this population.

Research objectives

The aims of the pilot study were to (1) explore the acceptability of integrating CRT and SCRT into a youth group treatment program, (2) assess the feasibility of facilitating this treatment program in a youth custodial setting, and (3) examine whether the measures designed for this study provide sufficient information to evaluate participants' functional changes. This was achieved through participant and staff surveys regarding the treatment program, and by monitoring the fidelity of the treatment program's implementation.

Methods

Participants

Participants were recruited from an Australian Youth Justice Centre (YJC) between March 2021 and January 2023. All participants voluntarily enrolled into the pilot study and had a documented history of mental health and/or neurodevelopmental disorders, as indicated in the participants' clinical records by the consultant psychiatrist from Justice Health NSW. Prior to participation, all individuals provided written consent and continued **to** receive and engage in previous treatment while in custody and involved in the program. The cohort comprised 12 youth males aged from 16 to 19 years (M = 17.40, SD = 1.14) all of whom were either convicted or in custody pending trial for an alleged offence. Among the participants, **f**ive were of Anglo-Saxon background, three were Māori, two were Samoan (16.5%), and two were of Ghanaian cultural heritage (16.5%).

Site location. The site location was chosen due to the length of stay needed to complete the 10-week program. The YJC selected for the study is one of the largest sites in NSW, Australia, and the Department of Education and Justice Health NSW were on-site stakeholders who provided the young offenders with services regarding their schooling, vocational and health needs.

Preliminary analysis. Sample data was taken to estimate the number of potential participants who could partake in the pilot study. The research clinicians searched de-identified data to determine the number of young people with a minimum stay of six months and who presented with mental health disorders. Data showed, on average, potentially 30 young people would be eligible to participate in the treatment program over the proposed timeframe of the pilot study. The researchers also examined response rates to participating in such voluntary programs, with previous pilot studies estimating a response rate of 50% (Thabane et al., 2010). By applying this calculation to the sample, a total of 15 potential participants was anticipated. Availability of staff and resources such as group facilitators and iPads were other considerations in estimating the group size. Given that three to six participants can complete a 14-week cycle (referral to baseline assessment followed by the 10-week program and post-treatment assessment) of a program of this type, it was estimated that a maximum of 12 participants would be expected to complete two programs in six months. This sample size was assessed as being adequate to provide sufficient data to assess the feasibility of the treatment program.

A thematic analysis was undertaken to examine participant feedback and an analysis of the pre- and post-treatment assessments was undertaken, along with collecting demographic information about the participants. These study aspects are the subjects of separate chapters reporting on these findings.

Group treatment program

The innovative strategy of integrating CRT and SCRT in the SLA treatment program was adapted from the Neuropsychological Educational Approach to Remediation program (NEAR) (Medalia et al., 2017) and Social Cognitive Interaction Training (SCIT) (Roberts et al., 2004) and was developed by the author with the support of the research team. The techniques from NEAR and SCIT were adapted for purpose, with new elements introduced to reinforce the fundamental principles of CRT and SCRT and tailored to suit the custodial setting. Structured as a closed group session, the program included interactive exercises, skill-building activities and discussions covering emotional awareness, executive functioning, interpersonal relationships, and future planning. The duration of sessions varied from 60 minutes to 90 minutes to accommodate the length of activities, participants' attention span, and the availability of Youth Justice (YJ) staff. Table 3 below outlines how the elements, or themes, were used in both evidence-based therapies (CRT and SCRT) that made up the treatment program.

Table 3

Implementation of SLA treatment program elements

How components were implemented	**CRT**	**SCRT**
Bi-weekly, in a 10-week group. **Facilitation:** Two facilitators, using meta reflective skills, positive regard, and trauma-informed practices.	Individual activity, iPad/smart device used. **Activity time:** 40-50mins **Themes:** identifying and using thinking skills and strategies; application to real-life scenarios.	Group activity **Activity time:** 30-40mins **Themes:** emotional processing; identifying social bias; integrating skills into real-life situations.

Research team. The research team was comprised of program facilitators (who were also the data collectors) and the clinical and research supervisors of the pilot study. The facilitators (i.e., two psychologists, one occupational therapist, and two clinical nurse consultants) all had over ten years' experience running group treatment programs and implementing care coordination in the Justice Health NSW Adolescent Team and/or the broader youth mental health sector. Before commencing the program, the research clinicians also conducted a two-hour training workshop on the SLA treatment program for staff across the YJC, including Justice Health NSW and Department of Education NSW.

Ethics approval

Approval for the study was granted by the Human Research Ethics Committee (HREC) of the Justice Health and Forensic Mental Health Network HREC (Reference 2019/EH13827), Aboriginal Health and Medical Research Council HREC (Reference 1629/20), and the Ethics Committee of Youth Justice New South Wales (Reference D20/313).

Measures

Data collection and analysis

For the pilot study, assessments were not blinded. Cognitive abilities were assessed using the following measures: Rey Complex Figure Test and Recognition Trial (RCFT) (Meyers & Meyers, 1995); Hinting Task (HT) (Corcoran et al., 1995); Penn Emotion Recognition Task (ER-40) (Carter et al., 2009); Behaviour Rating Inventory of Executive Functioning (BRIEF) Version 2 (Gioia et al., 2015) or Adult (Roth et al., 2005); and the Personal and Social Performance Scale (PSP) (Patrick et al., 2009). All measures, except for the Clinical Global Impression (Busner & Targum, 2007), were completed by participants pre- and post-intervention. The SLA Treatment Program Feedback Questionnaire was also completed post-intervention.

SLA Treatment Program Feedback Questionnaire. A 12-item feedback questionnaire was designed for participants and support workers (Appendix 2). These questionnaires assessed perceived improvements in functioning, enjoyable aspects of the treatment program, and whether the program was helpful. Questionnaire design was informed by past research, and included (i) the overall experience of participating in the group, (ii) the tasks involved, (iii) the role of the research clinician, (iv) the structure of the sessions, and (v) group interactions as critical in reviewing a CRT program (Peña et al., 2018; Stein, 2008).

Fidelity. Facilitators completed a fidelity checklist (i.e., Session Treatment Checklist, Appendix 3) after each session to ensure the consistent implementation of the treatment manual, document any modifications to session plans or new activities, and evaluate group engagement (Berger, 2015). Adhering to the fidelity checklist helped mitigate facilitator bias. In addition, mid-way through the treatment program, at week five, facilitators conducted a check-in to gather feedback from participants regarding the program's effectiveness. This feedback was also recorded on the Session Treatment Checklist.

Results

Research feasibility and acceptability determinants

Recruitment. A total of 65 young people either self-referred or were nominated by staff to attend the program. Following the initial meeting (to discuss the research study and consent), 22 young people agreed to continue the treatment program in four consecutive groups. Out of the 22 participants, three were transferred to another YJ site, one dropped out after COVID-19 lockdown and six were released during the COVID-19 restrictions. COVID-19 had an impact on three of the four groups. The resultant response rate for participation in the treatment program was 33.8%. Research clinicians observed that unit walk-arounds generated better response rates through self-referrals and the interested participants often matched with staff referrals. Additionally, this response rate allowed for the organisation of

groups with six to five participants, ensuring the availability of resources, such as the ratio of facilitators per participant and the number of smart devices. The achieved response rate demonstrated the feasibility of implementing this treatment program in a custodial site.

Retention rate. Overall, 22 participants were recruited, and 12 completed the treatment program, representing a 54.5% retention rate. Six participants were enrolled in Group 1, one transferred to another site, and five completed the treatment program from this group. Six participants were enrolled in Group 2, which ceased due to COVID-19 restrictions. Group 3 had six participants enrolled. One dropped out after a break caused by COVID-19 restrictions, and one transferred to another custodial site. Also, one participant in Group 3 only attended part of the treatment program due to a competing music course. Four participants commenced in Group 4 and 7 weeks into the program one participant was moved to another custodial site. Overall, the retention rate for 12 participants attending 80% or more of the sessions was 91.6%, while one participant attended only 60% of the treatment program. Despite COVID-19 challenges, the retention rate achieved shows the acceptability of facilitating this treatment program in a long-term custodial site.

Acceptability of the treatment program. Responses to the feedback questionnaires showed that all 12 participants completing the program found the treatment program helpful and enjoyed the activities. They specifically rated elements they enjoyed: 100% playing CRT games on the smart device; 92% learning from others in the group; and 92% gaining a better understanding of their emotions. Additionally, support workers reported that 85% of participants enjoyed developing their skills in understanding their emotions, 71% enjoyed learning from others in the group, and 57% got better skills while playing CRT games.

Participants and support workers rated the treatment program as effective in generalising cognitive and social skills and applying this to everyday life. Across all

participants, 61% reported confidence in applying “quite a few skills” learnt throughout the treatment program, and 38% reported applying “some skills”. Support workers rated 57% of participants as learning “some skills” during their treatment and felt that 42% learnt “many skills” to apply to their everyday lives.

Participants also reported that the treatment program resulted in positive changes to their schoolwork (92%), their friendships (84%), and their relaxation time (76%). Support workers’ responses suggested that 85% of participants experienced positive changes in their schoolwork, friendships, and leisure time because they engaged with the treatment program.

Acceptability and validity of the assessment measures. The research team observed that participants sustained engagement for the full time as required when completing the pre- and post-treatment assessments, each taking 45 minutes. The RCFT and BRIEF- 2/A self-reports were tolerated well by participants, especially considering their reading and comprehension capabilities. The research clinicians also observed that the RCFT was easy to administer, and other assessments could also be administered during the 30 minutes before finishing the RCFT. Participants had difficulty listening to and concentrating on the Hinting Task short stories and the research team often repeated the stories and had to explain some of the American terms such as Twinkies and Ajax. Despite the facial images being black and white, old and outdated on the ER-40, this test clearly showed cultural diversity and was easy to administer. In the raw data from the ER-40, participants consistently misread facial expressions depicting anger. Even after incorporating specific information on anger recognition, participants struggled to identify angry faces accurately. Although these results were not statistically significant, they indicated persistent challenges in this area.

Despite the PSP being a quick scale to rate, support workers struggled to understand the complexities of the rating system, and this was also the case for the BRIEF-2/A. Training

was requested and provided. However, it was discovered that the support workers were giving the PSP and BRIEFs to the unit managers to complete, and no formal training had been provided to guide them in filling these out. Unfortunately, the research clinicians could not access unit managers to discuss completion of PSP and BRIEFs because they were busy completing other tasks and managing the young people on the unit. The CGI was introduced because of the poor return rate of the PSPs and the BRIEFs from participants' support workers. The CGI was chosen because it was easy to administer using clinical notes and there was no extra burden placed on participants or support workers. It was completed after the groups were finished.

Fidelity. Two facilitators underwent two days of training in the NEAR and SCIT programs and were deemed competent by a qualified facilitator. To ensure support for the facilitators, each experienced facilitator was paired with one with less practice. The referral form, often incomplete, was used during the assessment session to gather relevant information, such as the ability to attend twice a week. The assessment process was clear, utilising a checklist during pre and post sessions. Facilitators provided feedback on activities to treating teams, including sessions emails to YJ caseworkers and school teachers, file notes in the Justice Health NSW electronic system, and regular updates to the YJ clinical manager. Facilitators reviewed their adherence to the treatment manual session plans after each session, with the aim of reducing variance, and documented their observations in the Session Treatment Checklist. There was also a check-in during week five to ensure participant needs were being met. Participants provided feedback on the activities, such as requesting more on relationship dilemmas and activities that involved challenges, which the facilitators used to refine the program. The adaptation process involved the main themes combined into youth friendly and engaging activities related to real-world experiences.

Feasibility. Through the pilot study, the SLA treatment program was assessed as being feasible to run through small group sessions in a YJC. The treatment program was implemented over a 16-week cycle, excluding any interruptions due to COVID-19. The program was run twice weekly. The group size of a maximum of six participants in each group was acceptable. The group facilitators were observed to have sufficient time to conduct one-on-one check-ins during the CRT component, effectively maintaining focus, particularly given that most participants were diagnosed with ADHD. It was not considered feasible to increase the frequency of sessions due to potentially impacting other programs, such as going to the gym or playing games such as basketball and table tennis. The timing and frequency of sessions also considered potential participant fatigue, as any additional sessions would have needed to be conducted in an afternoon timeslot because of the school program. The treatment program for the pilot study was run outside school times, on Mondays at 3:30 pm and Thursdays at 11:30 am.

Due to restrictions in accessing parental support in custody, the treatment program was designed without parent or carer support to achieve the goals set for participants during treatment sessions. Instead, the program was adapted to involve a nominated support person to act in this role. However, the extent to which this was enacted varied depending on the capacities of the support person and their work commitments in the centre.

The pilot study also reduced the treatment times used to run the program due to the onsite restrictions. It was decided to facilitate the program for no longer than 90 minutes instead of the normal two hours to run both programs. This ensured that participants could stay focused and engaged in the program. Due to the custodial setting Wi-Fi connectivity was disconnected from the iPads and games were downloaded before each session. The iPads were easy to use, engaging and youth friendly.

It was intended to involve an Aboriginal support worker in the treatment sessions, however this was only possible for Group 2 due to resourcing and availability. There was a high dropout rate for potential Aboriginal participants, primarily during the consent process which was part of the first meeting. Both these aspects suggest that additional cultural support for Indigenous participants may be required during the recruitment and facilitation phases of future program iterations.

Discussion

Despite COVID-19 restrictions encountered during the pilot study, the study found that the SLA treatment program effectively made positive cognitive changes for most participants, as reported through positive feedback from participants and support workers. The retention rate was also considered high, with 91.6% of the 12 participants completing 80% or more of the 20 treatment sessions. The pilot study also showed that the group treatment program of neurocognitive training using smart devices and social cognitive group discussions and activities was feasible, well tolerated, and acceptable for young offenders in this restricted environment.

Standardised neurocognitive measures, (i.e., RCFT and BRIEF) were successfully administered to participants, however, the HT was limited in its use because of its age and culturally restricted references. Staff encountered difficulties in completing the PSP and BRIEF measures and an effective way of administering these measures was not identified. It is recommended that future programs use alternatative measures. Despite the treatment program being feasible to run in a custodial setting, this setting presented several challenges, such as staff availability and the necessity to transfer young offenders to other custodial facilities. Further training and support of staff involved in the program could assist with using the assessment measures in the program.

The minimal enrollment of Aboriginal Australian participants in the study was another limitation. Young Aboriginal participants were highly reluctant to engage, particularly during the initial consent process, highlighting the need for additional cultural support during recruitment and facilitation in future programs. Another limitation relates to adequate resourcing of group facilitators, with the study using the same person to complete participant assessments and potentially introducing bias, despite the trauma-informed approach of employing the same facilitator and assessor also being a positive.

Conclusion

This study supported the acceptability and feasibility of the SLA treatment program but suggested revisions to the measures completed by staff and exploration of alternative means of participant assessment. Consistent with other studies, measures of social cognition were limited in their ability to reflect social cognitive performance (Harris et al., 2022; Nijman et al., 2020) and were not inclusive of essential constructs such as empathy. Also, it could be beneficial to adapt the treatment program to include specific information on recognising anger and addressing the misattribution bias for anger in young offenders.

The inclusion of Aboriginal Australian support workers and/or facilitators could enhance the cultural responsiveness of the treatment program and better meet the needs of participants from diverse backgrounds. Final, exploring the potential effects of decreasing the dosage rate (i.e., reducing the number of sessions) while retaining the program's benefits warrants consideration, as it could broaden the treatment program's applicability to other YJCs with shorter stays for young offenders. This recommendation stems from observations that one participant achieved positive outcomes despite completing fewer sessions.

The SLA treatment program represents an innovative intervention aimed at addressing neurocognitive and social cognitive impairments in young offenders. This pilot study has

demonstrated the feasibility and acceptability of implementing this program within a restricted custodial environment.

CHAPTER SIX: Conclusion

Introduction

At the end of this pilot study, it is important to acknowledge the journey it taken to get to this point. Obtaining ethical approval across various services proved to be a lengthy process, compounded by the disruptions caused during implementation by the COVID-19 pandemic. Despite these challenges, the commitment to implementing and evaluating this innovative program has proven worthwhile. Despite the complexities involved, running this program has been a source of fulfilment for the research team. The creative and engaging nature of the activities has been rewarding for both facilitators and participants, highlighting the significance of addressing neurocognitive and social cognitive impairments in a way that resonates with young offenders.

Discussion

Many factors support the need to improve interventions to support young offenders and guide them away from reoffending - the rise in violent offences (Derbyshire et al., 2019; Hodgkinson et al., 2021a), the high prevalence of mental health concerns and high recidivism rates (Marr et al., 2023). Youth offending behaviour is driven by a complex interplay of factors such as, trauma, learning and educational challenges, mental health and neurodevelopmental disorders, and limited access to opportunities to address these issues before contact with the justice system (Baetz et al., 2021; Gill et al., 2023; Stewart et al., 2023). Early life events such as childhood maltreatment, exposure to traumatic events, and adverse childhood experiences also contribute to emotional and behavioural challenges, leading to an increased risk of criminal behaviour (Haysom et al., 2023; Malvaso et al., 2022; Ringland et al., 2016; Simpson et al., 2018).

Young offenders face delays in cognitive development, affecting emotional regulation and decision-making abilities, hindering crucial milestones, and contributing to offending behaviour (Borschmann et al., 2020; Bower et al., 2018; Hein et al., 2020; Hodgkinson et al., 2021a; Simpson et al., 2018). These deficits delay maturation, disadvantage reintegration into the community and increase the likelihood of offending behaviour and poor life outcomes (Hajri et al., 2022; Himelstein et al., 2012; Kim et al., 2018; Penner et al., 2011; Wallinius et al., 2019). Key cognitive skills like attention, executive functioning, and theory of mind are vital for leading fulfilling lives, highlighting the importance of addressing impairments in these areas (Kim et al., 2018). Targeted interventions aimed at improving neurocognitive and cognitive social impairments show promise in enhancing outcomes and aiding successful reintegration into society post-custody (Dark et al., 2018; Darmedru et al., 2017; Dubreucq et al., 2020; Hajri et al., 2022; Harris et al., 2022; van Duin et al., 2019; Vidarsdottir et al., 2019).

Both Penner et al. (2011) and Rowlands et al. (2020) suggest that mental health treatment interventions for young offenders are an area of research that remains largely unexplored. Additionally, a systematic review by Gagnon et al. (2022) and research by Hein et al. (2020) found that studies failed to assess the effectiveness of treatment programs for young offenders in youth custody. Methodological issues such as using reliable measures and treatment fidelity were often overlooked (Gagnon et al., 2022). Cultural appropriateness was also rarely addressed in treatments despite the diverse backgrounds of youths in custody (Hodgkinson et al., 2021a; Koehler et al., 2013).

Young offenders experience complex issues and they require specialised and tailored treatments, rather than a universal approach (Gill et al., 2023). Interventions targeting neurocognitive and social development (Avenevoli et al., 2008; Borschmann et al., 2020; Dooley & Fitzgerald, 2012; Kessler et al., 2005) and that offer a unified response and culturally inclusive environment (Malvaso et al., 2022) are considered most beneficial.

SLA treatment program

The School-Link Advantage (SLA) treatment program was designed to provide young offenders with essential tools to navigate an independent life by focusing on developing personal growth skills and building their capacity to manage life stressors to succeed in adulthood. The SLA treatment program integrated elements of existing treatments with learning scenarios relevant to the target group of young male offenders with poor educational attainments and from diverse cultural backgrounds. The program was trialed with a pilot research study conducted from 2020 to 2023. The pilot study combined Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) to target deficits caused by mental health and neurodevelopmental disorders that are prevalent in young offenders (Gagnon et al., 2022; Penadés et al., 2012; Stewart et al., 2023; Tadros, 2021; Usher et al., 2019).

Research aims and summary of findings

The pilot study sought to: (1) develop a combined treatment program of CRT and SCRT that was tailored to the experience of young people in custody with cognitive difficulties and mental health and neurodevelopmental disorders; (2) explore the feasibility and acceptability of using this treatment program; and (3) explore the measures used and to evaluate participants' cognitive and functional changes.

Combined treatment program

Two evidence-based programs, NEAR (a program based on a CRT approach) and SCIT (SCRT approach), were integrated in the design, and the treatment program and the associated activities was adapted to a custodial setting. The adapted SLA treatment program featured tailored activities focusing on emotional recognition, executive functioning, relationships, and future planning. Sessions, ranging from 60 to 90 minutes, accommodated activity length and frequency to suit the custodial environment. Participants with cognitive difficulties and mental health and or neurodevelopmental disorders were unanimous in their satisfaction with the program's helpfulness. Participants enjoyed playing CRT games on the smart devices, valued learning from group interactions, and gained insight into their emotions (Demily et al., 2016; Pasqualotto et al., 2021; Ramli & Purba, 2023). Support workers observed that participants enjoyed enhancing their emotional understanding, benefited from peer learning, and improved their performance in playing CRT games. The SLA Treatment Manual is attached in Appendix 1.

Feasibility and acceptability

The treatment program was able to engage and retain participants, with the vast majority of participants demonstrating a commitment to completing the program despite the challenges. This high retention rate highlighted the acceptability and feasibility of the group

treatment program. Participants lost were overwhelmingly lost due to administrative issues e.g., transfer to another facility. The pilot study enabled the practical application of learned strategies (Bowie, 2019). It also demonstrated promising outcomes on emotion control and reducing impulsiveness. This has the potential to reduce reoffending behaviours (Cotter et al., 2018; Hodgkinson et al., 2021b).

As with other programs, participants and support workers found the SLA treatment program acceptable and effective in enhancing neurocognitive and cognitive and social skills and their application in daily life (Dark et al., 2018; Hajri et al., 2022; Harris et al., 2022; Vidarsdottir et al., 2019). Participants reported positive changes to their schoolwork, friendships, and relaxation time which they related to the treatment program. Support workers observed improvements in schoolwork, friendships, and leisure time due to participant engagement with the treatment program.

The pilot study assessed the feasibility of the SLA treatment program in a Youth Justice Centre (YJC), finding it manageable over 10 weeks with sessions held twice a week. Additionally, there were six weeks allocated for pre and post assessments, making a total cycle of 16 weeks. Group sizes of up to six participants were deemed practicable, with facilitators conducting one-on-one check-ins. Due to the custodial restrictions, session frequency remained at twice per week with the program scheduled outside school hours. Despite planning for broader involvement, Aboriginal support was limited to one group due to resource constraints, suggesting a need for enhanced cultural support during recruitment and facilitation. Parents were also not involved due to the distance most participants were from their homes.

Acceptability and validity of the assessment measures

The research team noted that participants were able to engage with the pre- and post-assessments, each lasting 45 minutes. The RCFT and BRIEF-2/A were well tolerated. Participants encountered difficulties during the Hinting Task, often requiring the stories to be repeated and unfamiliar terms explained. While the ER-40 showed cultural diversity, participants struggled with accurately identifying the facial signs of anger. Although not statistically significant, these challenges persisted, indicating ongoing difficulties in this area.

Support workers faced challenges using the rating system of the PSP and having enough information to answer questions on the BRIEF-2/A. To address the low return rates of PSPs and BRIEFs, the CGI was introduced due to its ease of administration and minimal burden on support workers.

Cognitive and functional changes

Overall, the pilot study showed the acceptability of a program combining CRT and SCRT interventions (the SLA treatment program) that was designed to improve cognitive and mental health outcomes for young offenders in custody. Despite the restrictive environment of the custodial setting, results indicated significant improvements in neurocognitive abilities, particularly in information retrieval, processing speed, and emotion control. While the study did not observe changes in social cognition, it was underpowered, and the findings aligned with previous research, suggesting the need for larger-scale investigations to assess this.

Strength of the findings

The findings highlighted improvements in neurocognitive capacities including information retrieval, planning, organising and emotional control. Both participants and staff provided positive feedback supporting the implementation and facilitation of the SLA treatment program. The treatment program demonstrated strengths in application, requiring only minor adjustments to activities to effectively facilitate its implementation. Other critical

elements vital to the implementation of this treatment program included: strong collaboration with other community services such as Youth Justice (YJ) and Education (Dickens et al., 2023); utilising engaging activities to keep the participants interested and motivated (O'Brien et al., 2016; Serie et al., 2023); understanding the participants' strengths and weaknesses and matching their needs with the required skills (Gagnon et al., 2022); and the use of trauma-informed practices by the research team (Malvaso et al., 2022; O'Brien et al., 2016).

The pilot study also found the group format of the program helped participants connect with one another and build a sense of belonging (Malvaso et al., 2022). There was a considerable degree of insight into the problems that they experienced in day-to-day life and an understanding that these areas were being targeted by the treatment program. The participants in the pilot study experienced positive gains in their understanding of the perspectives and feelings of other people, problem-solving abilities, and ability for critical reflection (Javadi et al., 2019; Quinn & Shera, 2009). The program's potential to develop essential life skills for personal growth aligns with previous CRT research targeting real-world difficulties.

Another strength of the pilot study was the creation of a supportive and structured environment within the program (Malvaso et al., 2022). Participants valued the sense of belonging and connection fostered through the individualised and practical program content. In matching the program's content to each participant's learning style enhanced the sense of connection and engagement (Aronson & Kahn, 2004; Quinn & Shera, 2009). This also highlights the value of considering youth perspectives in shaping therapeutic interventions (Javadi et al., 2019; Quinn & Shera, 2009), thereby ensuring interventions are relevant and effective for this population.

Limitations of the findings

The SLA pilot study was run in only one custodial centre, during a time when routine was significantly disturbed by COVID-19. All groups were run by the same team. The small sample size necessarily limits the conclusions that can be drawn and constrains the ability to generalise findings to other populations. Specifically, the low enrolment of Aboriginal participants, despite the high proportion of young Aboriginals in custody, undermines the acceptability of the application of the program for that group.

Chapter 4 highlights a further limitation, in that the findings were not adjusted for multiple comparisons, increasing the risk of Type 1 errors, and requiring careful interpretation and extrapolation of the results.

Resource constraints prevented the use of facilitators from diverse backgrounds, limiting cultural support. To improve the inclusion of young Aboriginal participants, there is a need for enhanced cultural support during the recruitment and facilitation stages. Potential Aboriginal participants found the consent procedure for the program intimidating and this would need to be culturally grounded. Resource constraints also meant that the facilitators also operated as assessors. While this introduced potential bias, it meant that facilitators had valuable insights into the psychological histories of participants, allowing for appropriate trauma-informed care during the treatment sessions.

Another difficulty with the pilot research study was the inability of support workers involved in the care of participants to complete some of the measures regarding function. The research team attempted to identify familiar staff members who could complete the measures, but this was unsuccessful. If these staff had time and the knowledge to complete the measures, their insight could have enriched the study findings. To address the challenge of incomplete measures, one potential solution may be to involve parents or carers in completing the forms to provide valuable insights into the participants' experiences and

behaviours outside of the custodial setting. Additionally, considering alternative measures that the young people could complete for assessment purposes could be helpful.

The treatment program faced an inherent limitation due to the restricted environment of the custodial setting. Participants were transferred without warning and sometimes alternative activities were conducted that undermined the running of the group and the recruitment of some young offenders. By necessity, this environment hindered opportunities for participants to practise their learning in real-life situations within the community. This could have an impact on their ability to transfer learned skills and strategies into their daily lives upon release.

The pilot research study showed the importance of addressing various risk domains beyond the immediate treatment setting, including education, employment and social relationships (Campbell et al., 2014; Gagnon et al., 2022; Lin et al., 2020; Malvaso et al., 2022; Stewart et al., 2023). However, there were challenges encountered in involving families in the treatment program due to the restricted environment. This meant that participants' ability to develop better family support networks to help with successful reintegration into society post-release may have been hindered.

Theoretical focus of combining CRT and SCRT treatments

One of the most significant findings of the research pilot study related to the positive outcomes derived from using a combined CRT and SCRT treatment approach for young people in custody with an improvement in the ability to store and retrieve information, recognise information, plan and organise as well as control emotions. Thus, changes were seen in both neurocognitive and social cognitive domains. There has been limited research to date on combining CRT and SCRT for this population. The program offered a holistic approach to addressing cognitive deficits and social cognition impairments among young offenders in custody. The SLA treatment program had the advantage of drawing on strengths

from both CRT and SCRT modalities allowing access to a comprehensive set of strategies to enhance the recovery and wellbeing of young people in contact with the criminal justice system (Isaac & Januel, 2016). Building cognitive and social skills has the potential to improve overall wellbeing and help prevent future criminal actions, offering better life opportunities for young offenders (Dodge et al., 2015) and helping to equip them with the necessary skills to better adapt back into the community after being in custody (Gill et al., 2023; Ikonomopoulos et al., 2015; Malvaso et al., 2022; Usher et al., 2019). SCRT plays a vital role in facilitating communication strategies, targeting common challenges faced by young offenders, while CRT targets thinking capabilities, assisting with maturation difficulties often associated with this cohort.

The group format proved beneficial, allowing young offenders to connect in meaningful conversations and to learn from their peers (Sapiro & Ward, 2020). Learning from peers has been a key feature of NEAR, the foundational CRT approach employed. The SLA treatment program used group dynamics to improve interpersonal skills, promote empathy, and provide space for shared experiences, giving a supportive atmosphere within the restrictive environment of a youth custodial setting.

The design of this treatment program took into account methodological challenges and considered the developmental stage of the young offenders' thinking and interpersonal skills, particularly about areas of real-world functioning. Unlike many programs that focus solely on addressing the specific behaviour or symptoms (Dwyer & Oostermeijer, 2022; O'Brien et al., 2016; Stewart et al., 2023), this program emphasises the enhancement of skills necessary for success in various domains of life, including work, study, and pro-social activities. By targeting these areas, the treatment program aims to equip young offenders with the practical tools and abilities needed for successful reintegration into society and long-term outcomes.

Clinical implications

The design of activities for the SLA treatment program took into account the constraints of the custodial environment to enhance the implementation of this treatment program. This necessitated extensive changes to source materials, including resources, session times, and activities, with some activities deemed impractical to run in this setting. The activities were designed to provide opportunities for interaction and movement to encourage interest and also included calming exercises, with this range of activities promoting optimal engagement and better outcomes for participants.

Treatment development

During the pilot study, strategic adaptions were made to the program's delivery. This was made possible by using a fidelity checklist (i.e., Treatment Session Checklist) for each session, capturing any practical problems that arose during sessions. Review of these fidelity checklists allowed the research team to analyse any issues, plan solutions and make necessary adjustments, such as reversing the order of activities to address participant needs better. The original session outlines had SCRT activities first. However, it was observed that CRT activities grounded participants in the therapeutic space and would be more appropriate for when the session commenced, allowing participants to focus quietly on an activity before entering group discussions with SCRT activities. The fidelity process also ensured that sessions followed a set procedure, and measured participants' responsiveness (Gagnon et al., 2022).

The SLA treatment program used recovery and client-focused care principles in all dealings with young offenders (Borschmann et al., 2020; Isaac & Januel, 2016). This approach ensured a focus on meeting the individual needs of those who participated. The pilot study showed that engaging in varied activities tailored to individual needs and using a variety of learning styles sustained interest and encouraged active engagement. This

demonstrates the importance of implementing a dynamic and adaptable approach in such treatment programs to accommodate young offenders' varied cognitive and emotional abilities.

A positive outcome of the treatment program was the beneficial effect of the group format, which highlighted the value of connections with the other group members and fostered developments in empathy and collaboration. The elements used in the treatment fostered a supportive environment, boosting skills, confidence, and self-esteem, all of which are essential in navigating social and emotional challenges during the transition to adulthood.

Implementation of the program

The research team collaborated closely with other staff, including those from YJ and school, within the custodial system to enhance the effectiveness of the intervention (Malvaso et al., 2022; Vitopoulos et al., 2019). For example, the research team negotiated with YJ management to explore strategies for mitigating potential risk factors and incorporating smart devices into the program. Staff support for the treatment program's objectives played a vital role in the feasibility and successful implementation of the SLA treatment program though the pilot study.

The support provided by YJ was collaborative and aided in delivering comprehensive health services tailored to the needs of young offenders (Campbell et al., 2014; Gagnon et al., 2022; Lin et al., 2020; Malvaso et al., 2022; Stewart et al., 2023). The research team worked collaboratively across different departments including Youth Justice NSW, Justice Health NSW, and the NSW Department of Education to establish strong relationships and successfully promote, manage, and implement the treatment program. Strong links with YJ staff was important in aiding the research team to create a safe and positive environment to deliver an effective treatment program (Dwyer & Oostermeijer, 2022; Quinn & Shera, 2009).

Future Directions

Having an Australian perspective on treatments for young offenders is crucial, informed by a broader understanding of effective practices and treatments globally (Penner et al., 2011). Future research would benefit from larger, diverse samples in randomised controlled trials, including culturally appropriate elements to enhance accessibility for Aboriginal youths. Utilising diverse facilitators, multiple sites and increasing participant numbers would enhance the generalisability of findings and provide insights into site-specific challenges and opportunities.

Future research could include integrating the treatment program into the custodial system to maximise its benefits. For example, integrating the treatment goals with those set by the participants and YJ caseworkers can be beneficial. This discussion can highlight how it helps participants meet their goals effectively and may also save time for YJ caseworkers. This treatment program could also be incorporated into the custodial school program, with sessions run during school time to enhance attention, concentration, and decrease impulsiveness of the young offenders participating. Expanding the program's reach to include community schools designed for students experiencing emotional and behavioural problems could also provide valuable insights into the program's effectiveness in different contexts, particularly through a randomised controlled trial.

Future studies would benefit from having more diverse and culturally appropriate facilitators. Other suggestions for potential enhancements include: adjusting the assessment measures used; incorporating follow-up measures after six months to examine the potential maintenance of the treatment program and the potential reduction in reoffending behaviour; involving family or carers in the treatment process (Samper et al., 2021); conducting further research on peer relationships within groups (Javadi et al., 2019; Quinn & Shera, 2009); and incorporating more activities focused on emotion recognition in the treatment sessions. In

addition, addressing issues related to incorrect facial recognition of anger, even if not statistically significant, would enable a more targeted response to this concern. For example, focusing on anger by asking questions such as what it looks like, how to identify it, and what drives this behaviour could be beneficial. Additionally, future studies could benefit from adding measures on empathy and impulsiveness, which were not included in the current study but could provide valuable insights. For example, incorporating an empathy measure may reveal changes in social cognitive functioning, such as the ability to understand the viewpoints of others and engage in prosocial behaviours (Lui et al., 2019). Similarly, a study examining impulsiveness after participants received group treatment targeting perspective-taking skills has demonstrated a reduction in impulsiveness and promoted cognitive development (van der Stouwe et al., 2016). As always, the measures used to identify neurocognitive and social cognitive deficits are difficult to use in this population and the identification of other measures that are easier and less time-consuming to complete may improve deficit identification and also provide better treatment outcomes.

Another potential enhancement would be to negotiate with YJ to incorporate outdoor spaces for treatment sessions, as this could enhance participant engagement and the overall experience (Lane & Reed, 2023).

It is not clear what constitutes a dose of this treatment. No clear result was seen for the duration of treatment in a meta-analysis of CRT by Vita et al. (2021). It may be possible to provide a shorter version of the program for short-term custodial settings. Some participants in the current study have proposed maintaining connections after completing the program through custody maintenance sessions, facilitating ongoing group activities and skill reinforcement. These follow-up sessions, although presenting some difficulties such as extra resourcing, planning and coordination across services such as YJ and Education, as well as internally with Justice Health staff, could be beneficial for both participants and assessing the

feasibility of the treatment program. This part of the program could be provided online if the participants could be supported to identify resources in the community to achieve this.

Future iterations of this treatment program could consider changing staff training sessions to include the treatment goals, discussing the measures used and what outcomes they aim to provide, and giving staff an example of a session outline to understand the process better. Also, training for participants' families or carers could be considered as well as involving facilitators from diverse backgrounds in planning meetings.

One other consideration for future interventions of this nature is whether the presence of YJ staff in group program sessions has a potentially negative or positive affect on participant engagement. In this pilot study, the YJ staff presence may have contributed to the absence of disturbances among participants. In this study, YJ staff members were involved in activities, and reinforced the objectives of the planned treatment session. It was observed that participants were usually so deeply engrossed in creative group discussions and activities that they were not concerned by the presence of YJ staff.

Final comments

The successful completion of three out of the four treatment groups in the SLA treatment program pilot research study has demonstrated the feasibility of using this 20-session program over ten weeks in a youth custody setting to target social and cognitive impairments in young offenders. The pilot research study trialed a unique combination of CRT and SCRT treatments which proved very successful in showing positive effects with a high level of acceptability for young offenders, albeit for a small group and in a single custodial site. The success of the program required a strong partnership and collaboration between with YJ and Education. The young participants were highly receptive to the program and frequently identified how it could be of benefit to them.

This study provided valuable insight into the experiences and needs of young offenders with mental health and neurodevelopmental disorders. There is the strong potential for this treatment program to be used more broadly, and with further research, to contribute to rehabilitation, personal growth, and better life outcomes for young offenders.

References

Ahmed, A. O., Hunter, K. M., Goodrum, N. M., Batten, N.-J., Birgenheir, D., Hardison, E., Dixon, T., & Buckley, P. F. (2015). A randomized study of cognitive remediation for forensic and mental health patients with schizophrenia. *Journal of Psychiatric Research*, *68*, 8-18.

Anderson, S. A., Hawes, D. J., & Snow, P. C. (2016). Language impairments among youth offenders: A systematic review. *Children and Youth Services Review*, *65*, 195-203.

Andrews, D. A., Bonta, J., & Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior*, *17*(1), 19-52.

Aronson, S., & Kahn, G. B. (2004). Group interventions for treatment of psychological trauma: Module 3: Group interventions for treatment of trauma in adolescents.

Australian Institute of Health, & Welfare. (2022). *Youth detention population in Australia 2022*. https://www.aihw.gov.au/reports/youth-justice/youth-detention-population-in-australia-2022

Avenevoli, S., Knight, E., Kessler, R. C., & Merikangas, K. R. (2008). Epidemiology of depression in children and adolescents. *Handbook of depression in children and adolescents*, 6-32.

Azizi, A., Drikvand, F. M., & Sepahvandi, M. A. (2018). Comparison of the effect of cognitive rehabilitation and neurofeedback on sustained attention among elementary school students with specific learning disorder: A preliminary randomized controlled clinical trial. *Applied Psychophysiology and biofeedback*, *43*, 301-307.

Baetz, C. L., Surko, M., Moaveni, M., McNair, F., Bart, A., Workman, S., Tedeschi, F., Havens, J., Guo, F., Quinlan, C., & Horwitz, S. M. (2021). Impact of a Trauma-Informed Intervention for Youth and Staff on Rates of Violence in Juvenile Detention

Settings. *Journal of interpersonal violence*, *36*(17-18), NP9463-NP9482. https://doi.org/10.1177/0886260519857163

Baglivio, M. T., Epps, N., Swartz, K., Huq, M. S., Sheer, A., & Hardt, N. S. (2014). The prevalence of adverse childhood experiences (ACE) in the lives of juvenile offenders. *Journal of juvenile justice*, *3*(2).

Baskin, D. R., & Sommers, I. (2011). Child maltreatment, placement strategies, and delinquency. *American Journal of Criminal Justice*, *36*, 106-119.

Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative research*, *15*(2), 219-234.

Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., & Crotty, K. (2011). Low health literacy and health outcomes: an updated systematic review. *Annals of internal medicine*, *155*(2), 97-107.

Bölte, S., Feineis-Matthews, S., Leber, S., Dierks, T., Hubl, D., & Poustka, F. (2002). The development and evaluation of a computer-based program to test and to teach the recognition of facial affect. *International journal of circumpolar health*, *61*(sup2), 61-68.

Borschmann, R., Janca, E., Carter, A., Willoughby, M., Hughes, N., Snow, K., Stockings, E., Hill, N. T., Hocking, J., & Love, A. (2020). The health of adolescents in detention: a global scoping review. *The Lancet Public Health*, *5*(2), e114-e126.

Bower, C., Watkins, R. E., Mutch, R. C., Marriott, R., Freeman, J., Kippin, N. R., Safe, B., Pestell, C., Cheung, C. S., & Shield, H. (2018). Fetal alcohol spectrum disorder and youth justice: a prevalence study among young people sentenced to detention in Western Australia. *BMJ open*, *8*(2), e019605.

Bowie, C. R. (2019). Cognitive remediation for severe mental illness: state of the field and future directions. *World Psychiatry*, *18*(3), 274.

Bradford, E. E., Jentzsch, I., & Gomez, J.-C. (2015). From self to social cognition: Theory of mind mechanisms and their relation to executive functioning. *Cognition, 138*, 21-34.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative research in sport, exercise and health, 11*(4), 589-597.

British Medical Association. (2014). Young lives behind bars: the health and human rights of children and young people detained in the criminal justice system. *London: British Medical Association*.

Bulman, M. (2017). Young offenders deprived of psychology services amid 'epidemic'of mental health problems in prisons. Independent. In.

Bush, J. (2016). To help a criminal go straight, help him change how he thinks. *National Public Radio*.

Busner, J., & Targum, S. D. (2007). The clinical global impressions scale: applying a research tool in clinical practice. *Psychiatry (edgmont), 4*(7), 28.

Butler, T., Indig, D., Allnutt, S., & Mamoon, H. (2011). Co-occurring mental illness and substance use disorder among Australian prisoners. *Drug and alcohol review, 30*(2), 188-194.

Byrne, L. K., Lingyi, P., McCABE, M., Mellor, D., & Yifeng, X. (2015). Assessment of a six-week computer-based remediation program for social cognition in chronic schizophrenia. *Shanghai archives of psychiatry, 27*(5), 296.

Campbell, S., Abbott, S., & Simpson, A. (2014). Young offenders with mental health problems in transition. *The Journal of Mental Health Training, Education and Practice, 9*(4), 232-243.

Cann, J., Falshaw, L., & Friendship, C. (2005). Understanding 'what works': Accredited cognitive skills programmes for young offenders. *Youth justice*, *5*(3), 165-179.

Carter, C. S., Barch, D. M., Gur, R., Gur, R., Pinkham, A., & Ochsner, K. (2009). CNTRICS final task selection: social cognitive and affective neuroscience–based measures. *Schizophrenia bulletin*, *35*(1), 153-162.

Cella, M., & Wykes, T. (2019). The nuts and bolts of cognitive remediation: exploring how different training components relate to cognitive and functional gains. *Schizophrenia Research*, *203*, 12-16.

Chitsabesan, P., & Hughes, N. (2016). Mental health needs and neurodevelopmental disorders amongst young offenders: implications for policy and practice. In *Mental health, crime and criminal justice: responses and reforms* (pp. 109-130). Springer.

Clarke, V., & Braun, V. (2021). Thematic analysis: a practical guide. *Thematic Analysis*, 1-100.

Coffey, C., Veit, F., Wolfe, R., Cini, E., & Patton, G. C. (2003). Mortality in young offenders: retrospective cohort study. *Bmj*, *326*(7398), 1064.

Cohen, J. (1988). The effect size. *Statistical power analysis for the behavioral sciences*, 77-83.

Coleman, D., & Stewart, L. M. (2010). Prevalence and impact of childhood maltreatment in incarcerated youth. *American Journal of Orthopsychiatry*, *80*(3), 343.

Combs, D. R., Adams, S. D., Penn, D. L., Roberts, D., Tiegreen, J., & Stem, P. (2007). Social Cognition and Interaction Training (SCIT) for inpatients with schizophrenia spectrum disorders: preliminary findings. *Schizophrenia Research*, *91*(1-3), 112-116.

Corcoran, R., Mercer, G., & Frith, C. D. (1995). Schizophrenia, symptomatology and social inference: investigating "theory of mind" in people with schizophrenia. *Schizophrenia Research*, *17*(1), 5-13.

Cotter, J., Granger, K., Backx, R., Hobbs, M., Looi, C. Y., & Barnett, J. H. (2018). Social cognitive dysfunction as a clinical marker: A systematic review of meta-analyses across 30 clinical conditions. *Neuroscience & Biobehavioral Reviews*, *84*, 92-99.

Couture, S. M., Penn, D. L., & Roberts, D. L. (2006). The functional significance of social cognition in schizophrenia: a review. *Schizophrenia bulletin*, *32*(suppl_1), S44-S63.

Cullen, A. E., Clarke, A. Y., Kuipers, E., Hodgins, S., Dean, K., & Fahy, T. (2012). A multi-site randomized controlled trial of a cognitive skills programme for male mentally disordered offenders: social–cognitive outcomes. *Psychological medicine*, *42*(3), 557-569.

Cumming, T. M., Strnadová, I., & O'Neill, S. C. (2018). Transition planning processes for young people serving custodial sentences in New South Wales, Australia. *Australasian Journal of Special and Inclusive Education*, *42*(2), 93-110.

Cunneen, C., Goldson, B., & Russell, S. (2016). Juvenile justice, young people and human rights in Australia. *Current Issues in Criminal Justice*, *28*(2), 173-189.

Danielson, M. L., Bitsko, R. H., Holbrook, J. R., Charania, S. N., Claussen, A. H., McKeown, R. E., Cuffe, S. P., Owens, J. S., Evans, S. W., & Kubicek, L. (2021). Community-based prevalence of externalizing and internalizing disorders among school-aged children and adolescents in four geographically dispersed school districts in the United States. *Child Psychiatry & Human Development*, *52*, 500-514.

Dark, F., Harris, M., Gore-Jones, V., Newman, E., & Whiteford, H. (2018). Implementing cognitive remediation and social cognitive interaction training into standard psychosis care. *BMC health services research*, *18*(1), 1-7.

Darmedru, C., Demily, C., & Franck, N. (2017). Cognitive remediation and social cognitive training for violence in schizophrenia: a systematic review. *Psychiatry Research*, *251*, 266-274.

Day, A.-M. (2021). The experiences of children in custody: a story of survival. *Safer communities*, *20*(3), 159-171.

Day, A.-M. (2022). Disabling and criminalising systems? Understanding the experiences and challenges facing incarcerated, neurodivergent children in the education and youth justice systems in England. *Forensic Science International: Mind and Law*, *3*, 100102.

de Beer, C. R. M., Nooteboom, L. A., van Domburgh, L., de Vreugd, M., Schoones, J. W., & Vermeiren, R. R. J. M. (2022). A systematic review exploring youth peer support for young people with mental health problems. *European Child & Adolescent Psychiatry*. https://doi.org/10.1007/s00787-022-02120-5

Demily, C., Rigard, C., Peyroux, E., Chesnoy-Servanin, G., Morel, A., & Franck, N. (2016). «Cognitus & Moi»: a computer-based cognitive remediation program for children with intellectual disability. *Frontiers in Psychiatry*, *7*, 10.

Derbyshire, J. M., Tarrant, E., Fitter, R., & Gibson, R. A. (2019). Evaluating treatment outcomes for young people participating in a high-intensity therapeutic violence intervention in the English Youth Custody Service. *Legal and criminological psychology*, *24*(1), 162-178. https://doi.org/10.1111/lcrp.12142

Dickens, C., Ramesh, A., Adanlawo, T., & DeBaun, M. R. (2023). Time-sensitive healthcare guidelines for youth with chronic diseases in custody: gaps in care. *Pediatric Research*, 1-4.

Dodge, K. A., Bierman, K. L., Coie, J. D., Greenberg, M. T., Lochman, J. E., McMahon, R. J., Pinderhughes, E. E., & Group, C. P. P. R. (2015). Impact of early intervention on psychopathology, crime, and well-being at age 25. *American Journal of Psychiatry*, *172*(1), 59-70.

Dooley, B., & Fitzgerald, A. (2012). *My world survey: National study of youth mental health in Ireland*. UCD School of Psychology Dublin, Ireland.

Dubreucq, J., Gabayet, F., Ycart, B., Faraldo, M., Melis, F., Lucas, T., Arnaud, B., Bacconnier, M., Bakri, M., & Cambier, G. (2020). Improving social function with real-world social-cognitive remediation in schizophrenia: results from the RemedRugby quasi-experimental trial. *European Psychiatry*, *63*(1), e41.

Dumont, M., Thériault, J., Briand, C., Dumais, A., & Potvin, S. (2018). Psychosocial approaches for individuals with schizophrenia in correctional and forensic psychiatric settings: a rapid review. *Journal of Forensic Practice*, *20*(3), 152-166. https://doi.org/10.1108/JFP-11-2017-0049

Dwyer, M., & Oostermeijer, S. (2022). A Model for the Design of Youth Custodial Facilities: Key Characteristics to Promote Effective Treatment. In *The Palgrave Handbook of Prison Design* (pp. 339-383). Springer.

Elliott, C. (2011). Criminal responsibility and children: A new defence required to acknowledge the absence of capacity and choice. *The Journal of Criminal Law*, *75*(4), 289-308.

Farrington, D. P., Loeber, R., & Howell, J. C. (2012). Young adult offenders: The need for more effective legislative options and justice processing. *Criminology & Public Policy*, *11*(4), 729-750.

Fernandez-Gonzalo, S., Turon, M., Jodar, M., Pousa, E., Rambla, C. H., García, R., & Palao, D. (2015). A new computerized cognitive and social cognition training specifically designed for patients with schizophrenia/schizoaffective disorder in early stages of illness: A pilot study. *Psychiatry Research*, *228*(3), 501-509.

Fernandez-Sotos, P., Torio, I., Fernandez-Caballero, A., Navarro, E., Gonzalez, P., Dompablo, M., & Rodriguez-Jimenez, R. (2019). Social cognition remediation interventions: A systematic mapping review. *PloS One*, *14*(6), e0218720.

Fisher, M., Loewy, R., Carter, C., Lee, A., Ragland, J. D., Niendam, T., Schlosser, D., Pham, L., Miskovich, T., & Vinogradov, S. (2015). Neuroplasticity-based auditory training via laptop computer improves cognition in young individuals with recent onset schizophrenia. *Schizophrenia bulletin*, *41*(1), 250-258.

Fitzpatrick, C., Boers, E., & Pagani, L. S. (2020). Kindergarten readiness, later health, and social costs. *Pediatrics*, *146*(6).

Ford, J. D., & Blaustein, M. E. (2013). Systemic self-regulation: A framework for trauma-informed services in residential juvenile justice programs. *Journal of family violence*, *28*, 665-677.

Gagnon, J. C., Benedick, A. R., & Mason-Williams, L. (2022). Mental health interventions for youth who are incarcerated: A systematic review of literature. *American Journal of Orthopsychiatry*, *92*(4), 391.

Garrido, V., & Morales, L. A. (2007). Serious (violent or chronic) juvenile offenders: A systematic review of treatment effectiveness in secure corrections. *Campbell Systematic Reviews*, *3*(1), 1-46.

Gaskin, C., Singh, S., Soon, Y.-L., Korobanova, D., Hawes, D., Lloyd, T., Kasinathan, J., & Dean, K. (2022). Youth mental health diversion at court: barriers to diversion and impact on reoffending. *Crime & Delinquency*, 00111287221122755.

Gettinger, M., Ball, C., Mulford, L., & Hoffman, A. (2012). Prevention and early intervention for preschool children at risk for learning and behavior problems. In *Handbook of youth prevention science* (pp. 349-374). Routledge.

Gill, S., Zeki, R., Kaye, S., Zingirlis, P., Archer, V., Lewandowski, A., Creighton, G., Shaw, C., & Bowman, J. (2023). Health literacy strengths and challenges of people in New South Wales prisons: a cross-sectional survey using the Health Literacy Questionnaire (HLQ). *BMC Public Health*, *23*(1), 1520.

Gioia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (2015). Brief 2: Behavior rating inventory of executive function.

Golan, O., & Baron-Cohen, S. (2006). Systemizing empathy: Teaching adults with Asperger syndrome or high-functioning autism to recognize complex emotions using interactive multimedia. *Development and psychopathology*, *18*(2), 591-617.

Goodsell, B., Lawerence, D., Ainley, J., Sawyer, M., Zubrick, S., & Maratos, J. (2017). An analysis of educational outcomes from Young Minds Matter: The sceond Australian Child and Adolescent Survey of Mental Health and Wellbeing.

Grant, N., Lawrence, M., Preti, A., Wykes, T., & Cella, M. (2017). Social cognition interventions for people with schizophrenia: a systematic review focussing on methodological quality and intervention modality. *Clinical psychology review*, *56*, 55-64.

Green, M. F., Horan, W. P., & Lee, J. (2019). Nonsocial and social cognition in schizophrenia: current evidence and future directions. *World Psychiatry*, *18*(2), 146-161.

Grisso, T. (2008). Adolescent offenders with mental disorders. *The future of children*, 143-164.

Gupta, H., Tari-Keresztes, N., Stephens, D., Smith, J. A., Sultan, E., & Lloyd, S. (2020). A scoping review about social and emotional wellbeing programs and services targeting Aboriginal and Torres Strait Islander young people in Australia: Understanding the principles guiding promising practice. *BMC Public Health*, *20*(1), 1-20.

Hajri, M., Abbes, Z., Yahia, H. B., Jelili, S., Halayem, S., Mrabet, A., & Bouden, A. (2022). Cognitive deficits in children with autism spectrum disorders: Toward an integrative approach combining social and non-social cognition. *Frontiers in Psychiatry*, *13*, 917121.

Hamilton, S. L., Reibel, T., Watkins, R., Mutch, R. C., Kippin, N. R., Freeman, J., Passmore, H. M., Safe, B., O'Donnell, M., & Bower, C. (2019). 'He Has Problems; He Is Not the Problem...'A Qualitative Study of Non-Custodial Staff Providing Services for Young Offenders Assessed for Foetal Alcohol Spectrum Disorder in an Australian Youth Detention Centre. *Youth justice*, *19*(2), 137-157.

Hamza, M., Abbes, Z., Fakhfekh, R., Amado, I., & Bouden, A. (2018). The Cognitive Remediation Therapy Program Among Children with ADHD: Tunisian experience. *La Tunisie Medicale*, *96*(1), 30-35.

Harrington, L., Siegert, R., & McClure, J. (2005). Theory of mind in schizophrenia: a critical review. *Cognitive neuropsychiatry*, *10*(4), 249-286.

Harris, A. W., Kightley, M., Williams, J., Ma, C., & Dodds, C. (2022). Does Adding Social Cognitive Remediation Therapy to Neurocognitive Remediation Therapy Improve Outcomes in Young People With a Severe Mental Illness?—The Advantage Trial. *Frontiers in Psychiatry*, *12*, 789628.

Harvey, P. D., & Sand, M. (2017). Pharmacological augmentation of psychosocial and remediation training efforts in schizophrenia. *Frontiers in Psychiatry*, *8*, 177.

Haysom, L. (2022). Raising the minimum age of criminal responsibility to 14 years. *Journal of Paediatrics and Child Health*, *58*(9), 1504-1507.

Haysom, L., Kasinathan, J., & Singh, Y. (2023). Youth custody is no place for mentally ill children and young people. *Australasian psychiatry : bulletin of the Royal Australian*

and New Zealand College of Psychiatrists, *31*(3), 263-266. https://doi.org/10.1177/10398562231155753

Heffernan, O. S., Herzog, T. M., Schiralli, J. E., Hawke, L. D., Chaim, G., & Henderson, J. L. (2017). Implementation of a youth-adult partnership model in youth mental health systems research: Challenges and successes. *Health Expectations*, *20*(6), 1183-1188.

Hein, S., Weeland, J., Square, A., Haeffel, G. J., Chapman, J., Macomber, D., Lee, M., Geib, C. F., & Grigorenko, E. L. (2020). Effectiveness of a social problem solving training in youth in detention or on probation: An RCT and pre-post community implementation. *International Journal of Law and Psychiatry*, *72*, 101626.

Himelstein, S., Hastings, A., Shapiro, S., & Heery, M. (2012). A qualitative investigation of the experience of a mindfulness-based intervention with incarcerated adolescents. *Child and Adolescent Mental Health*, *17*(4), 231-237.

Hodge, M. A. R., Siciliano, D., Withey, P., Moss, B., Moore, G., Judd, G., Shores, E. A., & Harris, A. (2010). A randomized controlled trial of cognitive remediation in schizophrenia. *Schizophrenia bulletin*, *36*(2), 419-427.

Hodgkinson, R., Beattie, S., Roberts, R., & Hardy, L. (2021a). Psychological resilience interventions to reduce recidivism in young people: A systematic review. *Adolescent Research Review*, *6*, 333-357.

Hodgkinson, R., Beattie, S., Roberts, R., & Hardy, L. (2021b). Psychological Resilience Interventions to Reduce Recidivism in Young People: A Systematic Review. *Adolescent Research Review*, *6*(4), 333-357. https://doi.org/10.1007/s40894-020-00138-x

Hoffmann, T. C., Glasziou, P. P., Boutron, I., Milne, R., Perera, R., Moher, D., Altman, D. G., Barbour, V., Macdonald, H., Johnston, M., Lamb, S. E., Dixon-Woods, M., McCulloch, P., Wyatt, J. C., Chan, A.-W., & Michie, S. (2014). Better reporting of

interventions: template for intervention description and replication (TIDieR) checklist and guide. *BMJ : British Medical Journal*, *348*, g1687. https://doi.org/10.1136/bmj.g1687

Hogarty, G. E., Flesher, S., Ulrich, R., Carter, M., Greenwald, D., Pogue-Geile, M., Kechavan, M., Cooley, S., DiBarry, A. L., & Garrett, A. (2004). Cognitive enhancement therapy for schizophrenia: effects of a 2-year randomized trial on cognition and behavior. *Archives of general psychiatry*, *61*(9), 866-876.

Hopkins, T., Clegg, J., & Stackhouse, J. (2016). Young offenders' perspectives on their literacy and communication skills. *International Journal of Language & Communication Disorders*, *51*(1), 95-109.

Hubble, K., Bowen, K. L., Moore, S. C., & Van Goozen, S. H. (2015). Improving negative emotion recognition in young offenders reduces subsequent crime. *PloS One*, *10*(6), e0132035.

Ikonomopoulos, J., Smith, R. L., & Schmidt, C. (2015). Integrating narrative therapy within rehabilitative programming for incarcerated adolescents. *Journal of Counseling & Development*, *93*(4), 460-470.

Indig, D., Frewen, A., & Moore, E. (2016). Predictors and correlates of re-incarceration among Australian young people in custody. *Australian & New Zealand Journal of Criminology*, *49*(1), 73-89.

Isaac, C., & Januel, D. (2016). Neural correlates of cognitive improvements following cognitive remediation in schizophrenia: a systematic review of randomized trials. *Socioaffective neuroscience & psychology*, *6*(1), 30054.

Izydorczyk, B., & Niziołek, E. (2010). Application of group psychotherapy in the treatment of adolescent girls and women with anorexia nervosa (a model of therapeutic work

conducted in the “Dąbrówka” Neurosis and Eating Disorders Centre: author’s own experience). *Archives of Psychiatry and Psychotherapy*, *12*(3).

Javadi, S. M. H., Mohseni, L., Esmaili, I., Mohamadi, A., Seddighi, H., & Mousavi, S. H. (2019). A behavioral intervention for changing the attitude of young boys in Iranian Juvenile Detention Centers. *Iranian Rehabilitation Journal*, *17*(3), 241-251.

Jewell, J. D., Malone, M. D., Rose, P., Sturgeon, D., & Owens, S. (2015). A multiyear follow-up study examining the effectiveness of a cognitive behavioral group therapy program on the recidivism of juveniles on probation. *International journal of offender therapy and comparative criminology*, *59*(3), 259-272.

Jones, M. T., & Harvey, P. D. (2020). Neurocognition and social cognition training as treatments for violence and aggression in people with severe mental illness. *CNS spectrums*, *25*(2), 145-153.

Justice Health Forensic Mental Health Network, & Juvenile Justice NSW. (2017). 2015 Young people in custody health survey: Full report. In: NSW Government Sydney.

Keefe, R. S., Buchanan, R. W., Marder, S. R., Schooler, N. R., Dugar, A., Zivkov, M., & Stewart, M. (2013). Clinical trials of potential cognitive-enhancing drugs in schizophrenia: what have we learned so far? *Schizophrenia bulletin*, *39*(2), 417-435.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, *62*(6), 593-602.

Kilkelly, U., & Pleysier, S. (2023). Rights of the Child in the Child Justice System. In (Vol. 23, pp. 135-139): SAGE Publications Sage UK: London, England.

Kim, E. J., Bahk, Y.-C., Oh, H., Lee, W.-H., Lee, J.-S., & Choi, K.-H. (2018). Current status of cognitive remediation for psychiatric disorders: a review. *Frontiers in Psychiatry*, *9*, 461.

Kinner, S. A., Degenhardt, L., Coffey, C., Sawyer, S., Hearps, S., & Patton, G. (2014). Complex health needs in the youth justice system: a survey of community-based and custodial offenders. *Journal of Adolescent Health*, *54*(5), 521-526.

Kobau, R., Seligman, M. E., Peterson, C., Diener, E., Zack, M. M., Chapman, D., & Thompson, W. (2011). Mental health promotion in public health: Perspectives and strategies from positive psychology. *American journal of public health*, *101*(8), e1-e9.

Koehler, J. A., Lösel, F., Akoensi, T. D., & Humphreys, D. K. (2013). A systematic review and meta-analysis on the effects of young offender treatment programs in Europe. *Journal of Experimental Criminology*, *9*, 19-43.

Kurtz, M. M., & Richardson, C. L. (2012). Social cognitive training for schizophrenia: a meta-analytic investigation of controlled research. *Schizophrenia bulletin*, *38*(5), 1092-1104.

Lambie, I., & Randell, I. (2013). The impact of incarceration on juvenile offenders. *Clinical psychology review*, *33*(3), 448-459.

Lancaster, C., Balkin, R. S., Garcia, R., & Valarezo, A. (2011). An evidence-based approach to reducing recidivism in court-referred youth. *Journal of Counseling & Development*, *89*(4), 488-492.

Lane, D., & Reed, P. (2023). The nature space. A reflexive thematic analysis of therapists' experiences of 1: 1 nature-based counselling and psychotherapy with children and young people: Exploring perspectives on the influence of nature within the therapeutic process. *Counselling and Psychotherapy Research*, *23*(2), 432-445.

Leader, E. (1991). Why adolescent group therapy? *Journal of Child and Adolescent Group Therapy*, *1*, 81-93.

Legemaat, A. M., Semkovska, M., Brouwer, M., Geurtsen, G. J., Burger, H., Denys, D., & Bockting, C. L. (2022). Effectiveness of cognitive remediation in depression: a meta-analysis. *Psychological medicine*, *52*(16), 4146-4161.

Liddell, M., Blake, M., & Singh, S. (2017). Over-represented and misunderstood: Pacific young people and juvenile justice in NSW. *Australian & New Zealand Journal of Criminology*, *50*(4), 529-547.

Lin, B., Clancey, G., & Wang, S. (2020). Youth justice in Australia: Themes from recent inquiries. *Trends and Issues in Crime and Criminal Justice [electronic resource]*(605), 1-19.

Lindenmayer, J.-P., Khan, A., McGurk, S. R., Kulsa, M. K. C., Ljuri, I., Ozog, V., Fregenti, S., Capodilupo, G., Buccellato, K., & Thanju, A. (2018). Does social cognition training augment response to computer-assisted cognitive remediation for schizophrenia? *Schizophrenia Research*, *201*, 180-186.

Lui, J. H., Barry, C. T., & Marcus, D. K. (2019). A short-term intervention for adolescents with callous-unemotional traits and emotion-processing deficits. *Journal of social and clinical psychology*, *38*(6), 475-500.

MacKay, T., Knott, F., & Dunlop, A. W. (2007). Developing social interaction and understanding in individuals with autism spectrum disorder: A groupwork intervention. *Journal of intellectual and developmental disability*, *32*(4), 279-290.

MacKenzie, D. (2018). More Education is What Makes People Live Longer, Not More Money. *New Scientist*, *3715*, 28.

Mallion, J. S., Wood, J. L., & Mallion, A. (2020). Systematic review of 'Good Lives' assumptions and interventions. *Aggression and violent behavior*, *55*, 101510.

Malvaso, C., Day, A., Hackett, L., Cale, J., Delfabbro, P., & Ross, S. (2022). Adverse childhood experiences and trauma among young people in the youth justice system. *Trends and Issues in Crime and Criminal Justice [electronic resource]*(651), 1-19.

Marr, C., Gaskin, C., Kasinathan, J., Kaye, S., Singh, Y., & Dean, K. (2023). The prevalence of mental illness in young people in custody over time: a comparison of three surveys in New South Wales. *Psychiatry, Psychology and Law*, 1-19.

McDiarmid, C. (2013). An age of complexity: Children and criminal responsibility in law. *Youth justice, 13*(2), 145-160.

McGorry, P. D., Purcell, R., Goldstone, S., & Amminger, G. P. (2011). Age of onset and timing of treatment for mental and substance use disorders: implications for preventive intervention strategies and models of care. *Current opinion in psychiatry*, *24*(4), 301-306.

Medalia, A., Herlands, T., Saperstein, A., & Revheim, N. (2017). *Cognitive remediation for psychological disorders: therapist guide*. Oxford University Press.

Mesholam-Gately, R. I., Giuliano, A. J., Goff, K. P., Faraone, S. V., & Seidman, L. J. (2009). Neurocognition in First-Episode Schizophrenia: A Meta-Analytic Review. *Neuropsychology*, *23*(3), 315-336. https://doi.org/10.1037/a0014708

Meyers, J. E., & Meyers, K. R. (1995). Rey complex figure test under four different administration procedures. *The Clinical Neuropsychologist, 9*(1), 63-67.

Mirowsky, J. (2017). *Education, social status, and health*. Routledge.

Moore, E., Gaskin, C., & Indig, D. (2013). Childhood maltreatment and post-traumatic stress disorder among incarcerated young offenders. *Child abuse & neglect, 37*(10), 861-870.

Munro, E., & Stein, M. (2008). Young People's Transition from Care to Adulthood: International Research and Practice. In.

National Mental Health Association. (2004). Mental health treatment for youth in the juvenile justice system: A compendium of promising practices. *Alexandria: National Mental Health Association*.

Nijman, S. A., Veling, W., van der Stouwe, E. C., & Pijnenborg, G. H. (2020). Social cognition training for people with a psychotic disorder: a network meta-analysis. *Schizophrenia bulletin*, *46*(5), 1086-1103.

Nkoana, W., Williams, H., Steenkamp, N., Clasby, B., Knowler, H., & Schrieff, L. (2020). Understanding the educational needs of young offenders: A prevalence study of traumatic brain injury and learning disabilities. *International Journal of Educational Development*, *78*, 102261.

O'Brien, K., Sullivan, D., & Daffern, M. (2016). Integrating Individual and Group-based Offence-focussed Psychological Treatments: Towards a Model for Best Practice. *Psychiatry, Psychology and Law*, *23*(5), 746-764. https://doi.org/10.1080/13218719.2016.1150143

O'Reilly, K., Donohoe, G., O'Sullivan, D., Coyle, C., Corvin, A., O'Flynn, P., O'Donnell, M., Galligan, T., O'Connell, P., & Kennedy, H. G. (2019). A randomized controlled trial of cognitive remediation for a national cohort of forensic patients with schizophrenia or schizoaffective disorder. *BMC psychiatry*, *19*(1), 1-12.

Owen, T., & Fox, S. (2011). Experiences of shame and empathy in violent and non-violent young offenders. *Journal of Forensic Psychiatry & Psychology*, *22*(4), 551-563.

Papadopoulou, K., Tsermidou, L., Dimitrakaki, C., Agapidaki, E., Oikonomidou, D., Petanidou, D., Tountas, Y., & Giannakopoulos, G. (2014). A qualitative study of early childhood educators' beliefs and practices regarding children's socioemotional development. *Early Child Development and Care*, *184*(12), 1843-1860.

Pasqualotto, A., Mazzoni, N., Bentenuto, A., Mule, A., Benso, F., & Venuti, P. (2021). Effects of cognitive training programs on executive function in children and adolescents with Autism Spectrum Disorder: A systematic review. *Brain sciences*, *11*(10), 1280.

Patrick, D. L., Burns, T., Morosini, P., Rothman, M., Gagnon, D. D., Wild, D., & Adriaenssen, I. (2009). Reliability, validity and ability to detect change of the clinician-rated Personal and Social Performance scale in patients with acute symptoms of schizophrenia. *Current Medical Research and Opinion*, *25*(2), 325-338.

Peña, J., Ibarretxe-Bilbao, N., Sánchez, P., Iriarte, M. B., Elizagarate, E., Garay, M. A., Gutiérrez, M., Iribarren, A., & Ojeda, N. (2016). Combining social cognitive treatment, cognitive remediation, and functional skills training in schizophrenia: a randomized controlled trial. *Npj Schizophrenia*, *2*(1), 1-7.

Peña, J., Ibarretxe-Bilbao, N., Sanchez, P., Uriarte, J. J., Elizagárate, E., Gutiérrez-Fraile, M., & Natalia, O. (2018). Mechanisms of functional improvement through cognitive rehabilitation in schizophrenia. *Journal of Psychiatric Research*, *101*. https://doi.org/10.1016/j.jpsychires.2018.03.002

Penadés, R., Catalán, R., Pujol, N., Masana, G., García-Rizo, C., & Bernardo, M. (2012). The integration of cognitive remediation therapy into the whole psychosocial rehabilitation process: an evidence-based and person-centered approach. *Rehabilitation research and practice*, *2012*.

Penn, D., Roberts, D. L., Munt, E. D., Silverstein, E., Jones, N., & Sheitman, B. (2005). A pilot study of social cognition and interaction training (SCIT) for schizophrenia.

Penner, E. K., Roesch, R., & Viljoen, J. L. (2011). Young offenders in custody: An international comparison of mental health services. *International Journal of Forensic Mental Health*, *10*(3), 215-232.

Pooley, K. (2020). What are the characteristics of effective youth offender programs? *Trends and Issues in Crime and Criminal Justice [electronic resource]*(604), 1-22.

Price, M., Yuen, E. K., Goetter, E. M., Herbert, J. D., Forman, E. M., Acierno, R., & Ruggiero, K. J. (2014). mHealth: a mechanism to deliver more accessible, more effective mental health care. *Clinical psychology & psychotherapy*, *21*(5), 427-436.

Puig, O., Penadés, R., Baeza, I., De la Serna, E., Sánchez-Gistau, V., Bernardo, M., & Castro-Fornieles, J. (2014). Cognitive remediation therapy in adolescents with early-onset schizophrenia: a randomized controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry*, *53*(8), 859-868.

Pyle, N., Flower, A., Williams, J., & Fall, A. M. (2020). Social risk factors of institutionalized juvenile offenders: A systematic review. *Adolescent Research Review*, *5*, 173-186.

Quinn, A., & Shera, W. (2009). Evidence-based practice in group work with incarcerated youth. *International Journal of Law and Psychiatry*, *32*(5), 288-293.

Ramli, R., & Purba, K. R. (2023). The development of a Game for Cognitive Remediation Therapy (CRT) to Improve Attention Span and Memory Among Children with Learning Disabilities. 2023 19th IEEE International Colloquium on Signal Processing & Its Applications (CSPA),

Rhoden, M.-A., Macgowan, M. J., & Huang, H. (2019). A systematic review of psychological trauma interventions for juvenile offenders. *Research on Social Work Practice*, *29*(8), 892-909.

Richards, A., Hoskin, N. M., Maddox, R. P., & Cornelius-White, J. H. (2019). A qualitative study of group therapy incorporating rap music with incarcerated individuals. *Journal of Creativity in Mental Health*, *14*(4), 478-491.

Ringland, C., Weatherburn, D., & Poynton, S. (2016). *Can child protection data improve the prediction of re-offending in young persons?* NSW Bureau of Crime Statistics and Research.

Roberts, D., Penn, D., & Combs, D. (2004). Social Cognition and Interacation Training: Treatment manual.

Roth, R. M., Gioia, G. A., & Isquith, P. K. (2005). *BRIEF-A: Behavior rating inventory of executive function--adult version*. Psychological Assessment Resources.

Rowlands, A., Fisher, M., Mishra, J., Nahum, M., Brandrett, B., Reinke, M., Caldwell, M., Kiehl, K. A., & Vinogradov, S. (2020). Cognitive training for very high risk incarcerated adolescent males. *Frontiers in Psychiatry*, *11*, 225.

Samper, P., Llorca, A., Malonda, E., & Mestre, M. V. (2021). Examining the predictors of prosocial behavior in young offenders and nonoffenders. *International Journal of Behavioral Development*, *45*(4), 299-309.

Sapiro, B., & Ward, A. (2020). Marginalized youth, mental health, and connection with others: A review of the literature. *Child and Adolescent Social Work Journal*, *37*, 343-357.

Semilarski, H., Soobard, R., & Rannikmäe, M. (2021). Promoting students' perceived self-efficacy towards 21st century skills through everyday life-related scenarios. *Education Sciences*, *11*(10), 570.

Serie, C. M. B., De Ruiter, C., Pleysier, S., & Put, J. (2023). Self-perceived views on offender rehabilitation in detained adolescent boys: a qualitative analysis in the context of the good lives model [Original Research]. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1153093

Shelton, D. (2005). Patterns of treatment services and costs for young offenders with mental disorders. *Journal of Child and Adolescent Psychiatric Nursing*, *18*(3), 103-112.

Simpson, S., Mercer, S., Simpson, R., Lawrence, M., & Wyke, S. (2018). Mindfulness-based interventions for young offenders: A scoping review. *Mindfulness*, *9*, 1330-1343.

Singh, Y., Kasinathan, J., & Kennedy, A. (2017). Incarcerated youth mental and physical health: parity of esteem. *International Journal of Human Rights in Healthcare*, *10*(3), 203-212. https://doi.org/https://doi.org/10.1108/IJHRH-03-2017-0011

Stathis, S. L., Harden, S., Martin, G., & Chalk, J. (2013). Challenges in establishing adolescent forensic mental health services within Australian youth detention centres. *Psychiatry, Psychology and Law*, *20*(6), 899-908.

Stein, M. (2008). Young people's transitions from care to adulthood: international comparisons and perspectives. Care Matters: Transforming Lives-Improving Outcomes (incorporating the 8th International Looking After Children Conference),

Stewart, A., Livingston, M., & Dennison, S. (2008). Transitions and turning points: Examining the links between child maltreatment and juvenile offending. *Child abuse & neglect*, *32*(1), 51-66.

Stewart, S. L., Thornley, E., Lapshina, N., Vingilis, E., Erickson, P., Hamilton, H. A., Abbas, S., & Semovski, V. (2023). Care planning needs for youth in custody, inpatient and outpatient settings. *Children and Youth Services Review*, *152*, 107082.

Tadros, E. (2021). Treating mental illness and relational concerns in incarcerated settings. *The Family Journal*, *29*(3), 359-367.

Tchanturia, K., Giombini, L., Leppanen, J., & Kinnaird, E. (2017). Evidence for cognitive remediation therapy in young people with anorexia nervosa: Systematic review and meta-analysis of the literature. *European Eating Disorders Review*, *25*(4), 227-236.

Teplin, L. A., Abram, K. M., McClelland, G. M., Washburn, J. J., & Pikus, A. K. (2005). Detecting mental disorder in juvenile detainees: Who receives services. *American journal of public health*, *95*(10), 1773-1780.

Testa, A., Jackson, D. B., Ganson, K. T., & Nagata, J. M. (2022). Adverse childhood experiences and criminal justice contact in adulthood. *Academic pediatrics*, *22*(6), 972-980.

Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., Robson, R., Thabane, M., Giangregorio, L., & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC medical research methodology*, *10*(1), 1-10.

Trotter, C., Evans, P., & Baidawi, S. (2017). The effectiveness of challenging skills in work with young offenders. *International journal of offender therapy and comparative criminology*, *61*(4), 397-412.

Truneckova, D., & Viney, L. L. (2007). Evaluating personal construct group work with troubled adolescents. *Journal of Counseling & Development*, *85*(4), 450-460.

Tuomi, M., & Moritz, D. (2023). Criminal responsibility of older children: The failings of doli incapax in Australia. *Children & Society*.

Turner-Brown, L. M., Perry, T. D., Dichter, G. S., Bodfish, J. W., & Penn, D. L. (2008). Brief report: Feasibility of social cognition and interaction training for adults with high functioning autism. *Journal of autism and developmental disorders*, *38*, 1777-1784.

Umbach, R., Raine, A., & Leonard, N. R. (2018). Cognitive decline as a result of incarceration and the effects of a CBT/MT intervention: A cluster-randomized controlled trial. *Criminal Justice and Behavior*, *45*(1), 31-55.

Underwood, L. A., & Washington, A. (2016). Mental illness and juvenile offenders. *International journal of environmental research and public health*, *13*(2), 228.

Usher, K., Douglas, L., & Jackson, D. (2019). Mental health and substance use disorders: The reality of youth in custody [Yes]. *International Journal of Mental Health Nursing*, *28*(3), 633-634. https://doi.org/10.1111/inm.12597

van der Stouwe, T., Asscher, J. J., Hoeve, M., van der Laan, P. H., & Stams, G. J. J. (2016). Social skills training for juvenile delinquents: Post-treatment changes. *Journal of Experimental Criminology*, *12*, 515-536.

van Duin, D., de Winter, L., Oud, M., Kroon, H., Veling, W., & van Weeghel, J. (2019). The effect of rehabilitation combined with cognitive remediation on functioning in persons with severe mental illness: systematic review and meta-analysis. *Psychol Med*, *49*(9), 1414-1425. https://doi.org/10.1017/s003329171800418x

van Duin, D., de Winter, L., Oud, M., Kroon, H., Veling, W., & van Weeghel, J. . (2019). The effect of rehabilitation combined with cognitive remediation on functioning in persons with severe mental illness: systematic review and meta-analysis. Psychological medicine. *Psychological medicine*, *49*(9), 1414–1425. https://doi.org/https://doi.org/10.1017/S003329171800418X

Vidarsdottir, O. G., Roberts, D. L., Twamley, E. W., Gudmundsdottir, B., Sigurdsson, E., & Magnusdottir, B. B. (2019). Integrative cognitive remediation for early psychosis: results from a randomized controlled trial. *Psychiatry Research*, *273*, 690-698.

Vita, A., Barlati, S., Ceraso, A., Nibbio, G., Ariu, C., Deste, G., & Wykes, T. (2021). Effectiveness, core elements, and moderators of response of cognitive remediation for schizophrenia: a systematic review and meta-analysis of randomized clinical trials. *JAMA psychiatry*, *78*(8), 848-858.

Vitopoulos, N. A., Peterson-Badali, M., Brown, S., & Skilling, T. A. (2019). The relationship between trauma, recidivism risk, and reoffending in male and female juvenile offenders. *Journal of Child & Adolescent Trauma*, *12*, 351-364.

Wallinius, M., Nordholm, J., Wagnström, F., & Billstedt, E. (2019). Cognitive functioning and aggressive antisocial behaviors in young violent offenders. *Psychiatry Research*, *272*, 572-580.

Wang, Y., Roberts, D. L., Xu, B., Cao, R., Yan, M., & Jiang, Q. (2013). Social cognition and interaction training for patients with stable schizophrenia in Chinese community settings. *Psychiatry Research*, *210*(3), 751-755.

Ward, T., Mann, R. E., & Gannon, T. A. (2007). The good lives model of offender rehabilitation: Clinical implications. *Aggression and violent behavior*, *12*(1), 87-107.

Williams, H., Hughes, N., Williams, W., Chitsabesan, P., Walesby, R. C., Mounce, L. T., & Clasby, B. (2015). The prevalence of traumatic brain injury among young offenders in custody: a systematic review. *Journal of head trauma rehabilitation*, *30*(2), 94-105.

Wilson, H. W., Berent, E., Donenberg, G. R., Emerson, E. M., Rodriguez, E. M., & Sandesara, A. (2013). Trauma history and PTSD symptoms in juvenile offenders on probation. *Victims & offenders*, *8*(4), 465-477.

Wykes, T. (2018). Cognitive remediation–where are we now and what should we do next. *J Psychopathol*, *24*(2), 57-61.

Yeo, H., Yoon, S., Lee, J., Kurtz, M. M., & Choi, K. (2022). A meta-analysis of the effects of social-cognitive training in schizophrenia: The role of treatment characteristics and study quality. *British Journal of Clinical Psychology*, *61*(1), 37-57.

Yoon, I. A., Slade, K., & Fazel, S. (2017). Outcomes of psychological therapies for prisoners with mental health problems: A systematic review and meta-analysis. *Journal of consulting and clinical psychology*, *85*(8), 783.

Young, S., Greer, B., & Church, R. (2017). Juvenile delinquency, welfare, justice and therapeutic interventions: a global perspective. *BJPsych Bull*, *41*(1), 21-29. https://doi.org/10.1192/pb.bp.115.052274

Appendix 1. SLA Treatment manual

School-Link Advantage Treatment Program

Manual and Facilitator's Guide

Health

Justice Health and

Acknowledgement

We extend our heartfelt gratitude to the creators and developers of the Neuropsychological Educational Approach to Remediation (NEAR) program, including MindPowers and Social Cognition Interaction Training (SCIT). The invaluable contributions behind these treatment manuals have been instrumental in shaping the foundation of our treatment program. Their dedication to advancing the fields of neuropsychological education and social cognition training has provided us with essential framework and methodologies for the development and implementation of effective treatment strategies.

Innovative in its approach, the SLA Treatment manual integrates elements of NEAR, including MindPowers, alongside SCIT techniques. This combination harnesses cognitive remediation strategies and social cognitive interventions to address the complex needs of young offenders. I would like to express my gratitude to Ms Jeanne Wang and Ms Malisha Perera for their invaluable contributions in the manual's content. Professor Harris, Dr Peter Malouf, Dr Daniel Talbot, Ms Jeanne Wang and Ms Michelle Kightley, provided invaluable input and edits, ensuring the manual's efficacy.

Rene Jones

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Facilitator's Guide

Purpose of this manual

This manual's purpose is to support and enable clinicians to implement designed and trialled School-Link Advantage (SLA) Treatment Program. The manual will also guide facilitators in conducting the program through twenty (20) staged 1.5-hour group treatment sessions.

In addition to supporting facilitators of the program, the manual is also a guide for clinicians on applying combined Cognitive Remediation Therapy (CRT) and Social Cognitive Remediation Therapy (SCRT) approaches, which underpin the treatment program. Specifically, this program uses the Neuropsychological Educational Approach to Remediation (NEAR) program (Medalia et al., 2017) and Social Cognition Interaction Training (SCIT) (Roberts et al., 2004).

The manual also provides materials to be used by facilitators implementing the program, including session guides, and supporting materials (e.g., invitation letters, information about the treatment program, worksheets, and referral forms).

Who is the target audience?

The target audience for this manual is youth mental health clinicians who work in the field of youth mental health.

The treatment was acceptable to young men aged between 16- to 21-year-old who were in custody and who experienced co-morbid mental health difficulties and neurodiversity, often with a background gap in their education. It uses hands-on work, movement-oriented activities, visual aids, and group conversations to share group experiences, learnings, and reflections.

The SLA Treatment Program is suitable to be facilitated by experienced youth mental health clinicians (allied health and Clinical Nurse Consultant) with practical skills in facilitating group work and a good understanding of adolescent development.

It is recommended that clinicians attend the SLA manual and facilitator's guide training before facilitating a treatment group or that at least one of the facilitators has completed this training.

Background to development of the program

The impact of mental illness on a young person's life is often noticed when work or study performance declines and/or relationships break down (Couture et al., 2006; Fett et al., 2013; Kurtz, 2005; Mesholam-Gately et al., 2009).
The presence of neurocognitive and social cognitive deficits can reduce the ability to execute everyday tasks. We cannot directly see neurocognitive deficits, yet we can see a young person struggle to function with everyday tasks, such as attending appointments, remembering important information, or planning activities (Couture et al., 2006; van Duin, 2019). This disadvantage is also evident within social settings through the inability to effectively interpret social cues.

About the SLA Treatment Program

The SLA Treatment Program involves several components: Recruitment and referrals, pre- and post-assessments, goal setting, group treatment sessions, feedback sessions, and outcome measures.

This manual focuses predominately on facilitating the 20-session group treatment program, designed for the SLA Research Study, which forms the core of the treatment program. Detailed session outlines are provided later in this manual. The framework for other aspects of the treatment program is also outlined below.

The treatment program aims to assist young people to use in using the strategies the NEAR and SCIT programs teach them daily.

Approaches used in the treatment sessions

The group treatment sessions deliver a combination of CRT and SCRT. These are evidence-based treatments recommended in the Royal Australian and New Zealand College of Psychiatrists (RANZCP) (Galletly et al., 2016) Clinical Practice Guidelines for treating schizophrenia and related disorders. CRT and SCRT are specifically designed to be suitable and non-distressing for individuals with a mental health condition.

Cognitive Remediation Therapy (CRT) can help train a person's thinking, improving attention, memory, language, and executive functioning. It uses a 'scaffolding' technique of learning, strategising, and practising to improve cognitive flexibility, working memory and planning in daily function [10]. Ultimately this targets social functioning, study and work outcomes, and motivation. Underpinning this approach is learning theory, whereby improving neuropsychological function gives an advantage in how you think and learn. The difference between CRT and cognitive behaviour therapy (CBT) is that the later teaches you to think and learn through emotional processes. The specific CRT intervention used in the SLA Treatment Program is the NEAR program (Medalia et al.,

Teaching cognitive and social cognitive skills to these young people is hoped to increase their level of functioning in everyday situations (Harris et al., 2022), thus helping them achieve their study, work, and life goals. One way of encouraging increased functioning is by helping young people remember and use relevant information while engaging in an activity (Peña et al., 2018). This treatment trains participants in how to solve problems, how to deal with social situations, and how to control emotions (Bush, 2016). Using the combined treatments of CRT and SCRT enhances outcomes, with improvements across functional areas, including education, employment, and social friendships (van

The NEAR program targets cognitive deficits by utilising -friendly applications (i.e., apps). The Apps are not necessarily educational software. Individual smart devices were used for each participant to access and play the stored games. The games covered strategies such as

problem-solving skills, attention and concentration, and processing speed. The group facilitators used MindPowers (Table 1 and Table 2) to guide the participants on focusing, amplifying their strengths, and encouraging them to continue their activities.
During each session, the group members work on their cognitive skills for 45 -50 mins, including a bridging component. NEAR facilitates both a verbal and a cognitive session. The verbal session is also referred to as bridging, as it bridges cognitive tasks to real-life cognition or life goals such as a vocational goal. During the cognitive session, when the group members play on the smart device, the group facilitators target the participants learning about their goals. This process involves generalising the learning of the strategies in the game and generalising these skills to the need of the goal. For example, the strategies for concentrating in the game, such as moving to a quiet space, blocking out distractions, wearing headphones is important when concentrating on an essay from school. The group facilitator also discusses how the participant can use the same strategies in other aspects of their life.

Social Cognitive Remediation Therapy (SCRT) interventions teach a person to recognise other peoples' emotions and better understand how others think and feel. This approach examines how our misunderstanding of emotions can influence how we respond in relationships. Modalities under the broad umbrella of SCRT can also assist people to examine their own biases in how they think and act in their everyday functioning. SCRT uses everyday social situations to explain and understand oneself and others and follows social learning theory. The SCRT intervention used in this program is Social Cognition Interactive Training (SCIT) (Combs et al., 2007; Roberts et al., 2010).

Understanding the interplay between how we think and feel, especially how this impacts our behaviour, is crucial to everyday functioning. For this reason, the SLA Treatment Program was designed to pair CRT with SCRT to maximise the impact of training in thinking skills and emotional development in one combined treatment program.

Group treatment sessions

The 20 group treatment sessions that form the program's core are conducted over 10 weeks, with each session running for approximately 90 minutes. Individual make-up sessions can be made available to participants if necessary to meet the target attendance rate of 80%. The closed sessions use interpersonal learning, group cohesiveness, socialisation and information sharing as the therapeutic factors underpinning the combined treatments (CRT and SCRT). Psychoeducation and process-orientated experiences are used throughout each group treatment session. The skill-building activities and group discussions underpinning the combined treatments involve therapeutic themes based on personal control or emotional regulation, personal development (i.e., executive function, values, and beliefs), relationships, health and wellness and safety planning. The activities and group discussions also help to engage group members.

Handouts, including factsheets and worksheets for the session plans, are included in the appendices. The handouts are shown in the session plans and will prompt the group facilitator to provide a hard copy of these materials in each treatment session.

Culturally responsive practice

In developing the SLA Treatment Program, the researchers sought advice, consultation, and collaboration with:

- Youth Justice (Justice Health Forensic Mental Health Network & Juvenile Justice NSW)
- Youth Justice Aboriginal Strategic Unit
- SLA Research Study's Aboriginal Reference Group (ARG)
- Justice Health and Forensic Mental Health Network's Aboriginal Mental Health Clinical Lead
- Aboriginal Health and Medical Research Committee (AH&MRC)

The study's culturally responsive practice has been integrated throughout the intervention by using a client- centred approach, valuing the diverse views of the participants and staff, and aiming to build upon each participant's cultural strengths. In particular, the treatment program has similarities with a program run by the Aboriginal Strategic Unit which included topics such as personal and sleep hygiene, values and beliefs, and identity

Role of facilitators

The treatment program is based on a client-centred approach where facilitators respond to participants with genuine and empathic understanding. The facilitators operate from the belief that each participant can change and learn.

In group discussions during the CRT, bridging, and SCIT components, the role of the facilitators is to encourage each participant to:

1. Develop knowledge and strategies which they can apply to everyday living and generalised learning.
2. Build awareness of their own emotional biases and understand the impact this can have on relationships.
3. Reflect on their learning and map out possible strategies to achieve better outcomes and improve their functioning.
4. Reflect on issues of motivation, such as self-esteem.

In addition, during the group treatment sessions, facilitators:

5. Monitor participants' processes and performance during activities.
6. Reinforce participants, so they develop confidence and a positive attitude.
7. Encourage enjoyment and fun to maximise participant engagement.

Resources for facilitators

When one-on-one discussions occur during the smart device-based CRT activities, facilitators:

1. Assess the participant's needs
2. Encourage participants to explain how skills they are using in the game can be applied in other parts of life
3. Make the connections clear for the participant as to how the skills being learned link to their personal goals and everyday practical activities, such as their studies and

The second part of this manual consists of a comprehensive set of session outlines for all 20 of the group sessions included in this treatment plan. Included in these session outlines are scripts to guide facilitators. These scripts are in italics and presented in the third person, as you would deliver them in the sessions.

Other support materials for facilitators are included in the appendices to this manual. This includes:

- Feedback and goal setting template
- Referral form
- Treatment Program flowchart
- Feedback and goal setting template
- Participant Feedback Questionnaire
- Staff/Carers Feedback Questionnaire
- Session Treatment Checklist
- List of iPad games
- Session Handouts.

Facilitators must use various skills and strategies when working with young people in groups. There are many ways to validate, reflect and provide the appropriate level of support and feedback for participants. Facilitators must 'drill down' to understand what works best for each participant and in each situation.

Table 1 highlights what behaviours should be amplified and validated. Young people naturally explore and develop their self-identity. Through validation and other positive feedback participants can begin to gain a better understanding of their strengths and how these strengths will benefit them throughout their life. It is important to name specific observations about their strengths and highlight why they are significant.

Table 1 – Behaviours to be amplified and validated

Aspect of behaviour	Indicator
Cooperation	• Attendance and punctuality • Follows group rules • Follows directions without resistance • Listens without interrupting
Motivation	• No delay to begin task • Initiative to learn, choosing own games • Able to ask for help • Interest level in learning and mastering software • Seeks positive reinforcement • Reinforce self-validation
Emotional response	• Acceptable level of tolerance to frustrations • Good anxiety management skills • Responds to constructive feedback • Works or makes an effort to reduce impulsivity • Expresses feelings appropriately
Social skills	• Works comfortably in the presence of others • Respectful to others • Interacts positively with others • Contributes to bridging and SCIT sessions: participates in discussion, makes spontaneous conversation, steps into the leadership role, and responds when called upon
Work quality	• Consistent, accurate, efficient • Recognises and corrects mistakes • Level of support provided: prompting or requires 1:1 • Awareness of thinking skills practiced • Identifies strategies • Generalises thinking skills to tasks outside program
Other considerations	• Current mood and thoughts that may be impacting on participation and engagement • Motor and sensory skills • Ability to access game or show another function of the game • Ability to adjust difficulty level

Table 2 – Feedback strategies

Table 2 categorises aspects that are important for positive reinforcement, to establish interest about participants' progress, and for shaping and prompting desired behaviours, with suggestions for feedback to support this.

Situation requiring feedback	Some examples of suggested feedback
Encouragement & Positive Reinforcement Presenting a motivating or reinforcing stimulus to the person after the desired behaviour and task is exhibited.	Well done for _____! I can see you are improving from last time. I like how you're using _____(strategy) to help you _____(thinking skill) so that _____(goal of game).
Generalisation Application of a response learned in one situation to a different but similar situation.	What thinking skills are you using in this game? How could you use this skill in everyday life? When would you need to maintain attention, for example? When else would you use these thinking skills outside of the group? Have you had to use a strategy to solve a problem outside of the group, for example? Are there things you're doing in this game similar to things you do in real life? Are there any strategies you are using in this game to help you_____(problem solve, maintain attention, jog your memory)? What strategies are you using to _____(goal of game e.g., in Mania Journey, making sure all the supermarket shelves are stocked)?
Modelling Participant learns new skills by imitating facilitator or peer facilitator who performs the desired task.	Provide participants with a demonstration and verbalise steps and strategies to increase awareness of cognitive skills and strategies used to reach the goals of the game.
Prompting A cue or hint meant to induce a person to perform a desired behaviour or task.	What is the goal of this game? What are the different ways you can meet your goal? How would you like to approach the game? Where might you find information that tells you how to play the game? What strategies may be useful? What challenges do you think you may have? How difficult do you think this game may be? What do you think the next step is? I noticed you did _____, do you think that worked well? Why/Why not? Let's go back and try something else Ask game specific questions e.g. "Where do you want to travel?"
Shaping Gradually teaching participants to perform a specific task by reinforcing any responses that are similar to the desired response.	You did a great job and almost got there! Is there anything you did that helped you achieve _____(game goal) that you can use next time? What could be done differently next time?

Running an SLA Treatment Program

Running an SLA Treatment Program

Getting started

Getting a group treatment program started can be a daunting process, however, this manual will guide you through the process each step of the way. First, you will need to assess whether the young people you support would benefit from and be interested in attending and committing to the treatment program. Another question you must examine is whether your organisation or management support the use of resources required to run the program. Apart from staff resources to facilitate the group treatment sessions, you will also need other resources, as set out below.

Invitation letters

Once you decide to proceed with the program, recruitment is the next step. Give an invitation letter suitable for staff, parents/carers and potential young people inviting their participation.

Sharing information about the program

A flowchart in the handout section outlines the expectations of staff, participants, and parents/carers. This can be sent to potential participants to help explain the process and what is expected of them. In addition, there is an Information Sheet for staff and caregivers.

Referral forms

For the SLA Research Study pilot program, a referral form was used to identify potential participants and assess their suitability for the group. You will need to determine the inclusion and exclusion criteria appropriate for your participants. A guide that can be adapted is included in the handout section. Ideally you will need to capture the psychiatric history, the ability to regulate emotions, and basic administration details such as frequency of sessions and what days participants can attend. Gaining consent for participation is crucial. For the pilot study, it also worked well to gain consent to share information that was relevant to the clinical treating team, Youth Justice and Department of Education.

Meeting to discuss suitability

The referral form can also guide facilitators when meeting with potential participants to discuss their interest in the program and explain what the program is about. This is a necessary step before deciding whether a potential participant will be suitable for the treatment program.

Goal-setting and individual face-to-face sessions

For the SLA Research Study pilot program, individual sessions on feedback and goal setting were to discuss participants' performance in pre-assessment testing (see 'Outcome measures' below) and identify their treatment goals to work on for the 10-week program. These individual sessions were conducted after the pre-assessments. Once the group treatment sessions commenced, group facilitators reviewed these goals weekly with the participants. The research clinicians also met with the clinical treating team, Youth Justice, and the education team to discuss participants' pre-assessment results. This collaborative approach enabled the development of inclusive treatment plans with all treating services.

The participants received a breakdown of their strengths and weaknesses (based on their pre-assessment results) before commencing the intervention. This was done through one-on-one sessions with a facilitator. An example of the worksheets used for this session is in the handout section.
The information shared in these sessions was also used to inform participant goal setting for the program. Goals focused on identifying areas the participant wanted to work on, such as managing uncertainty, concentration, or problem-solving skills.

Outcome measures

The baseline assessment in the pilot study involves, Neuropsychological Function, Social Cognitive Function and Real-World Functional Performance assessments. These included the Rey Complex Figure Test and Recognition Trial (RCFT) (Meyers & Meyers, 1995), then Penn Emotion Recognition Task (ER40) (Carter et al., 2009), Behaviour Rating Inventory Executive Function (BRIEF 2 (Gioia et al., 2015) or A (Roth et al., 2005), and Hinting Task (Corcoran et al., 1995) for pre- assessments lasting approximately 45-minutes. Young people in the pilot study were able to sustain their interest and engagement for this duration; however, facilitators should be wary of extending the length of the testing sessions any further. Therefore, when choosing outcome measures, you will need to consider the duration of the tests and young people's capacity to sustain attention for that period should you change the outcome measures.

The treatment was specifically customised based on the young person. The assessments examined attention, verbal comprehension, working memory and any other challenges raised by the young person. This information was compiled into a strengths and difficulties profile, which was thoroughly discussed with the young person during a feedback session alongside their support worker. In this session, the young person had the opportunity to reflect on these difficulties and collaboratively map out the areas they wish to address in the 10-week program, utilising a worksheet called 'Rate important aspects in my life' located in the handout section.

The post-assessment schedule covers the same format with the addition of the Participant Feedback Questionnaire (see handouts), which is completed on graduation day (session 20). Participants are asked whether they noticed their functioning improve or not, what treatment they enjoyed, what was not well received and what skills they considered to be transferrable in their everyday living.

A Staff/Carers Feedback Questionnaire (see handouts) is also available for support staff, and a nominated support person/ carer completes the BRIEF 2 or A and the Personal and Social Performance Scale (PSP) (Patrick et al., 2009). Preferably, the same person who did the pre-assessments would also do these post-assessments, if possible.

Treatment sessions

The 20 group treatment sessions are to be run in accordance with the comprehensive set of session outlines included later in this manual.

In addition, the Session Treatment Checklist (see handouts) is used to monitor that the treatment processes were followed. This checklist captures the treatment fidelity, including the effectiveness and consistency of implementing the treatment sessions. It records whether the treatment sessions followed the treatment-specific manual or, if not, how they deviated from the manual, and allows for comment on the delivery of the intervention.

Frequently asked questions

What's the difference between CBT and SCRT?

CBT is a widely used psychotherapeutic approach that focuses on identifying and changing negative thought patterns and behaviours to alleviate mental health issues. In contrast, SCRT targets social cognitive deficits and emphasises enhancing one's ability to accurately perceive and interpret social cues and interactions. In contrast, CBT is a more general therapy that addresses a broader range of cognitive and emotional issues.

Who do we target?

The program outlined in this manual has proven acceptability with 16- to 21-year- old males in custody with co-morbid mental health difficulties and neurodiversity. These young males also commonly have a background of gaps in their educational learning. The design uses hands-on work and movement-oriented activities alongside visual aids, group conversations to share experiences, and learning and reflection.

What other outcome measures would you recommend?

Pre- and post-assessments could be used to measure changes in everyday function, such as the Personal and Social Performance and group member survey. It is important to link goals with the pre-assessment results. This helps the young person understand why and how the group program can target skills to assist with achieving personal goals. When they experience success in this environment, it builds their motivation to tackle longer-term goals.

How many treatment sessions are recommended per week?

Two sessions per week. Young people struggled to complete three sessions because they had other programs to attend. Also, the NEAR program advises doing a minimum of two hours per week.

Why and how would we involve caregivers in this process?

During the pre- and post-assessment feedback sessions, include them in discussions and ask how they might support their child with their goals. You can also offer a parent information night to explain the basics and for them to ask questions to understand the purpose of the program.

What you'll need

You'll need to prepare these resources to effectively facilitate the sessions in this treatment program.

- [ ] Resources: Smart devices/tablets (e.g., iPads), butcher's paper, pens, worksheets, sensory items and food / drinks.
- [ ] Weekly checklist (fidelity)
- [ ] Same room available for each program session with tables and chairs to form one big discussion table and space for participants to individually move around the room
- [ ] Smartboard with internet access and white board
- [ ] Printed copies of individual session activities, handouts and related resources
- [ ] Graduation certificate and resources to celebrate at the end of treatment sessions
- [ ] Folders for each participant to store their worksheets
- [ ] Organise outcome measures
- [ ] Feedback forms for group members, staff, and carers to complete at each session

Notes:

Session outlines

Introduction to session outlines

The following session outlines provide a plan for facilitators to guide them through each of the 20 group sessions for the SLA treatment program. Suggested scripts are included (in italics) throughout each session plan. These scripts provide ways to introduce a topic or suggest questions to prompt discussion within the group.

Generally, each session starts with the CRT component of the program, with participants using smart devices to engage with CRT games. This has been observed to help participants focus on the present moment, and it also assists with their ability to regulate their emotions. This approach has been shown to maximise session objectives throughout the pilot groups.

Throughout the CRT component of each session, the facilitator explores how the different strategies used in the activities can improve the thinking skills of each group participant. This covers attention and concentration, memory, problem-solving, planning, and organising. An important element of this is to reflect on how applying and practising these skills in real-life scenarios can help improve participants' functioning and their capability to thrive in everyday life. This linking of the learning to everyday situations is called the 'bridging' component. For example, this includes reflecting on the best ways that participants learn and how this is different for everyone, and identifying when is the appropriate time to use their thinking skills to resolve a situation or if some other strategy is needed, such as active listening, goal setting, strategic thinking, and planning.

It is important to reflect on this learning with participants and discuss ways that the skills being learned can assist in making their lives easier. It is also useful to share group participant feedback about their experiences and how they have overcome any challenges, including strategies they have used which have been helpful.

The last component of each session is the SCRT element. This mostly involves discussing how emotions and behaviours interplay with how we think. The group reflected on the skills used in the activities and discussed ways they can help them navigate friendship or relationship difficulties, such as fact fact-checking and perspective-taking.

The treatment program also uses challenges throughout each session. These are mainly applied in the bridging component and act as an indirect way for participants to learn about their thinking as well as interpersonal and social skills. Points are awarded to the winner of each challenge and collated over the 20 sessions. Through the pilot groups in custody, a reward-based system where the participants could see how many challenges they had achieved during each session (i.e., tally system). At the end of the treatment program, the winner could choose the celebratory lunch meal from a takeaway restaurant.

After the treatment program, participants receive a school bag that includes sensory items (e.g., stress ball, bubbles for breathing exercises), toiletries, workbooks / journal, pens, and a list of emergency numbers. This is kept with their other possessions until the participant is released from custody.

Each session outline is designed to incorporate direct and indirect learning, with the activities encouraging participants to move around the therapeutic space, interact with others and use interesting visual aids. The sessions are also enhanced by encouraging group discussion, sharing experiences, and reflecting on themselves and others.

Session 1

Goals

- Provide a general overview of CRT and SCRT (i.e., SCIT) and why it's useful to do for our everyday life
- Discuss session structure, group boundaries and our over the next 10 weeks
- Identify attention strategies and give examples of when this is used in everyday living
- Introduce identifying emotions and how emotions interact with our thoughts and the way we act.
- Explain the interaction between performance and goals emotional arousal. Explain how performance works and how the level of interest, or arousal, influences performance

Time	Content	Actions
	Welcome	**Acknowledgment of Country by facilitator or group member** Following welcome to country, facilitator welcomes the group then each member introduces themselves to the group.
	Activity	**Ice breaker: where do I come from?** Group discussion: *Introduce yourself and discuss where you came from or grew up and what is unique about where you live? Other process questions: who do you live with? Who do you gain support from?* Use maps relevant to the demographic background, for example, the Aboriginal map of Australia, and / or the world map.
	Facilitator	Group discussion: **Goals** - discuss how the next 10 weeks will work in relation to the program goal headings listed below. *The program aims to learn strategies to help our thinking and relationships. These strategies will guide you in your everyday life. Does anyone know the meaning of this saying? "If you give a person a fish, you feed them for a day. If you teach a person to fish, you feed them for a lifetime".* Validate group answers and paraphrase that this program will teach the group members how to do these skills, making them more capable of doing everyday tasks rather than relying on others.

Example maps of Australia

Time Content Actions

20 Mins

Let's talk about the program goals:

- Working out how we think and how others feel in social settings
- Learning how our feelings and social environments affect our thinking
- Practising thinking skills and learning how to keep developing
- Avoiding jumping to conclusions
- Recognising when we don't have enough information to understand a situation
- Learning strategies to gather facts
- Helping each other use strategies in our own lives

Ask the group members what they would like to get from the program and record this on the butcher's paper.

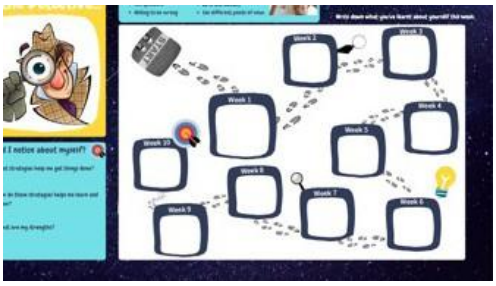
Structure of the program: 1hr and 30mins, 10 weeks (twice per week)

- We'll be talking about different topics, playing iPad games, watching YouTube clips, doing puzzles and games, sharing your own thinking styles and social experiences
- SCIT (30-40mins) involves group discussion: emotions and strategies to challenge our emotional barriers.
- iPad CRT and bridging activities (45-50mins): iPad activities and group discussion involves learning thinking skills and how this works in everyday life
- Practice: linking your personal goals to your thinking and social skills
- Challenges and activities will be awarded points.
- At the end of the 20 sessions, there will be a graduation party where the winner (i.e., the person with the most points) gets to choose the food for the celebration.

(Note: If the program is run outside custody, consider completing weekly prizes or saving points to get a bigger prize.)

Group boundaries (write on butcher's paper or can ask YP to volunteer as scribe)

Activity: Facilitate discussion regarding what they think the group boundaries should be. Mix common group rules with some silly ones, that they may choose. Ask the group to vote on what the rules include:



- If you're late you need to perform a dance
- Show respect to others in the group
- Give others your attention when they're talking
- Consider how your actions may affect others in the group

To help trace your goals and what strategies you learn, we're going to map out your weekly insights and reflections. Each session we will discuss your self- reflection. Like detectives, we want to be curious and to research how we interact with the world. For example, how do you motivate yourself to get what you want (goals), what interests you, what gives you strength, what do you want to do when you leave custody or school, how can you make the most of 'now'. This will be worked on over the next 10 weeks.

Time	Content	Actions

CRT 30 mins

iPad

Let's get started. When we're using the iPads, we're working on our thinking skills. Today, we'll focus on ***attention*** *and* ***concentration****. Our attention skills help us to focus on a task and our concentration skills allow us to use our attention for a specific amount of time. Let's have a look at how you use your attention and concentration skills.*

What I would like you to think about is what you need to do to keep your attention. To get started, let's open the focus folder on the iPad.

Group members will continue playing until 30mins into the session.

Facilitator

Group discussion: After 10mins of engaging with the activity discuss with the group what strategies they are using to maintain their attention/concentration skills in the next game. Possible questions to explore:

- *Is your attention selective, divided or simultaneous? What level of distraction is tolerated while successfully completing the task (iPad game)?*
- *What strategies will you use to help your attention/concentration while playing the iPad game? What strategies will help you reach a better score on the iPad game?*

Activity

Use the Fact Sheet below to explore what strategies the YP can use while playing the iPad game. Hand out the Fact Sheet.

Reflection activity: *Use a highlighter pen to mark which strategies work for you.*

Handout

Discuss some of these strategies with the group.

Attention compensation strategies: plan rests/breaks; cueing by other people or alarms; change tasks frequently; if better at certain times of day, plan least interesting tasks for then; make information more interesting/personally meaningful (reflective listening, PQRST method – preview, question, read, state, test); reduce distractibility (change environment); avoid situations doing more than one task; plan activities then carry them out rather than switching between tasks (lists and checklists); allow extra time.

Concentration compensation strategies: break tasks down into short sections; remove distractions from your environment (e.g., TV, radio etc.); try to make activities relevant (personal) and stimulating (e.g., when studying use coloured pens, highlighters etc.).

Time | Content | Actions

Bridging 20 mins

Activity

Resource + jenga tower

Let's pack up our iPads and move on to how our thinking skills and emotions work hand in hand in our everyday life

Challenge: Jenga activity:

Explain the challenge involves two group members each having a Jenga block tower and decide with the group which two members will compete against each other in the first round. Instruct the other group members to observe and strategise what skills to use when competing in the challenge themselves. The winner of the round is determined by who gets the highest number of building blocks without the tower falling and within the specified time limit (e.g., 1 minute). For consistency, request the group members to only use one hand at a time to pull the blocks from the tower. The group members will compete against each other using a process of elimination until there's an overall winner.

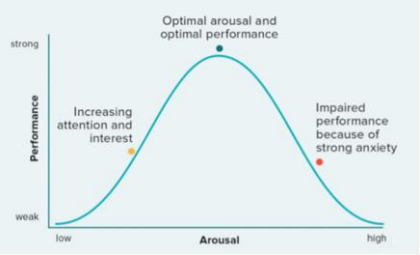
Resources: 2 x Jenga towers.

Facilitator

Resource

Group discussion: After the first two players have competed against each other, ask: *What did you notice about your/their performance?*

Explain how performance works and how the level of interest, or arousal, influences performance.



You reach your peak level of performance with an intermediate level of stress, or arousal. Too little or too much arousal results in poorer performance. Let's work on that optimal level with our performance and emotions. Did anyone have any judgement about their performance? I need to win etc. Did you notice your reactions, what you were feeling in your body? What did you notice the most?

Note: Ask participants to observe this each day to discuss what they found at the next session.

Discuss and define what thinking involves and how we use it in our everyday life. For example:

To change the way we think, we need to practise getting better at it and strengthen these connections in our brain. Can anyone think of a real-life situation when you must use attention and/or concentration skills when you were pressured to perform?

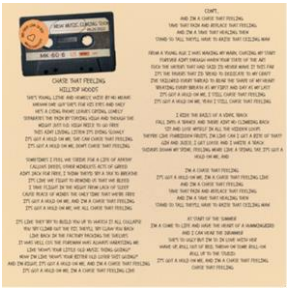
Possible answer: Learning to drive a car, sitting for an exam, learning how to perform a task at work, a test to drive a forklift or cut someone's hair.

Other questions to ask the group include:

What skill did we use today? How does that help us perform?

Discussion point (to lead into SCIT section): *How do emotions affect our thinking? What is the purpose of emotions?*

Some examples: Sadness gets us to draw others closer for comfort, guilt to apologise and repair, anger to protect and advocate. Emotions prepare us for action. We all need to learn whether our emotions are being effective and helping us or making things more difficult for us in the moment. This is all part of identifying and accepting our emotions.

Time	Content	Actions
SCIT 20 mins	Facilitator	*Now we're switching to a different topic. We will be looking at relationships and emotions, our social behaviour.* **Group discussion:** Explore who believes emotions/feelings are good and who thinks they are bad and ask group members to explain. Explain that emotions give us information. *Emotions communicate and influence how others will respond to us. Emotions can be painful. Emotions can overwhelm us, and we can react unhelpfully to them.* • *Can you think of a time when emotions have been useful? Or when they haven't been useful?* • *What if we treat our emotions as facts? If we listen to our fear about going to the dentist, we will have a mouth full of rotten teeth.*
	Activity Handout	*Let's look at how we communicate our feelings by listening to a song. What's the message of this song?* • Provide the words to the song and play the song. Chase that feeling, Hilltop Hoods. https://www.youtube.com/watch?v=uq8PyyMbrYQ
	Facilitator Resource	*What emotion do you think the singer was showing? Is it our thoughts motivating us to do things, or does it change how we feel or act?* Show YP the SCIT triangle diagram below. *Let's examine how this triangle works with our emotions, thoughts and how we act. Let's examine a situation. Has anyone ever stuck up for someone else? What made you act? What did you think? What motivated you? Emotions? Injustice, hurt, anger…* *Ask another real-life experience: What was it like when you spent your first night away from home?* **Discussion point:** *How can we tell what emotion we are experiencing? (i.e., Through sensations in the body, facial expressions etc.)* *Emotions, thoughts and actions all affect each other. Over the next couple of weeks, our focus will be emotions. The key is to build awareness of how our thinking and feeling influences our actions and how we behave. Today, we have described different ways that we identify emotions and thinking strategies and how being aware of both can be used to improve how we feel about ourselves and the activities of daily living.*

Notes

Session 2

Goals

- To build memory strategies and how this applies to everyday activities
- To be aware of emotions and how they change every hour/day
- To practise reflection and strategies for the week
- To build interpersonal skills.

Time	Content	Actions
CRT 30 mins	iPad	Welcome YP, set them up on iPads (using warm-up games), and model social conversation. For example: *How have you been? How is school?*
		Today we're using the iPads to tap into our working memory. That is, how we store and retrieve information.
	Facilitator	Instruct the group to practice on 'Mania Journey' and 'Jetpack joyride' games on the iPad. These focus on memory/working memory skills:
		Reflection activity: 20 minutes into playing the iPad games, either individually or as a group, ask:
		When do you use memory strategies? For example, how do you store information, such as your partner's number or the password to your computer? Do you write down information or memorise? Let's look at some strategies to help better "store and retrieve" information.
		Give group members the handout below about Memory Strategies.
		On the handout tick or highlight which ones you use regularly.
	Handout	
	Facilitator	Discuss these skills with the group. Skills include organise, categorise and chunk material to be learned; focus your attention on the material to be remembered; repeat material over several presentations; keep things to be learned small and simple – don't overload your brain; try to make the information to be learned significant and relevant to yourself; try and use as many senses as possible to learn information; match new information with previously learned information; develop a set routine in which habits can be formed; use a diary/organiser/phone for appointments/reminders.

Time | Content | Actions

Bridging 15 mins

Activity

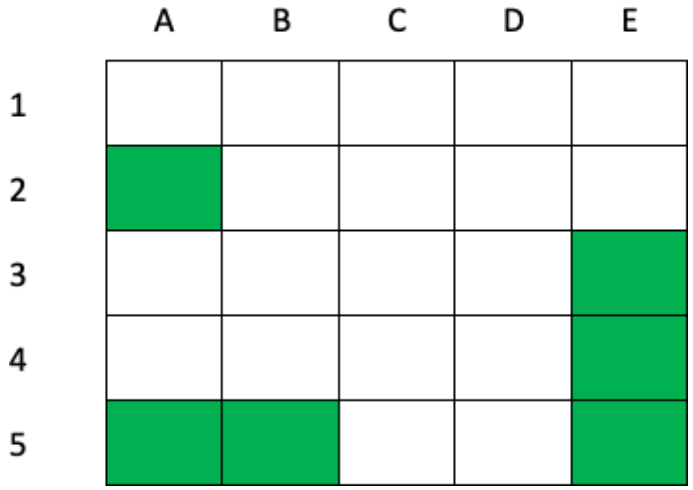
We're now going to move into the second part of working to strengthen our thinking skills and see how they can be used in everyday activities.

Discuss the challenge activity and the points that will be awarded to the pair that wins the overall game. *Points will be awarded for every challenge activity.*

Challenge: Battleship activity (memory and performance).

1. Ask the group members to pair up
2. Each pair will compete against each other
3. Each pair will draw a 5x5 table on the butchers paper provided
4. Before instructing the next step ensure the table cannot be seen by the opposing team (i.e., pair).
5. Ask the group members to colour in boxes to represent their ships. Instruct them to colour in 3 ships using different amounts of coloured boxes: one box, two boxes and three. For example, the first ship will be one coloured box, the second ship will be 2 boxes coloured together and the third ship will be 3 boxes coloured together. All the teams will be set the same sized ships.

Resource + butcher's paper



6. Discuss that each team will not be able to see the opposing team's table. Each team will take turns in guessing the coordinates of the opposing team's ships. For example, one coordinate is 1A, and the team receiving it will say a 'hit' or a 'miss'. If the box is coloured, it is a hit; if it's uncoloured, it is a miss. The team that has hit a ship won't know if the ship is one coloured box, or two or three. All the boxes in the ship will need to be hit before the ship is sunk. Once this occurs, the opposing team will announce that the ship has sunk. To win, all three ships need to have sunk. Note: If a team says the same coordinate twice, then opposing team gets to say two coordinates in a row.
7. Each team will have to discuss memory strategies, such as what strategies will make it easier to remember if the box was a 'hit' or a 'miss.' Strategies may include:
   a. Using a different colour pen to record the hits or misses on their table
   b. To draw another table and record the hit and misses for the opposing team
8. For the group members observing, ask them to notice what thinking strategies the others used to play the game.
9. Group discussion during or at the end of the activity:
   Ask and discuss: What strategies do you want to work on or add to your tool bag?
   What would it mean if you could remember better?
   How could you use these strategies to help you remember things in your everyday life?

Note: Refer back to the handout throughout the game or the end to help identify strategies or ask: *What could you do differently?*

Time | Content | Actions

Introducing SCIT (20mins)

Following the group discussion, ask: *What could disrupt you from remembering information?* Ask for examples/situations.

Discuss how unpleasant emotions can interfere/disrupt storing and retrieving information. For example, ask: *If you're feeling really sad or angry and your teacher, parent or/coach gives you some instructions, how much do you think you'll remember?*

Everyone knows that to do well in a job or at school we need ways to help us retain information, such as writing things down. In the same way, to help us to identify and understand how we feel, we need to be self-aware about our emotions and feelings.

Resource

Review the SCIT triangle from Session 1 at this point.
In the last session we discussed that emotions give us important information. Let's start to build how emotions can be useful to us and to build our self- awareness around emotions. This self-awareness is a strategy to help us review what happened when our emotions did not work to our fullest advantage.

Activity

Self-awareness activity: *This activity will explore our emotions.*

Sitting the group in a circle, pass around the following list of unfinished statements and ask each member in turn to complete a sentence. Each group member should finish a sentence dealing with pleasant and unpleasant emotions. Guide the discussion.

- When I'm bored, I like to…
- In my free time, I enjoy…
- I'm happiest when…
- When I make a mistake, I…
- When my day doesn't go my way, I…
- I feel angry when…
- I feel joyful when…
- I feel unhappy when…
- I feel hope when… I wish I didn't have to…
- I enjoy…
- I feel afraid when…
- Something I'd like to change is…
- If I were (name the person), I would…
- I feel like no one loves me when…
- Something I find boring is…
- I know I can trust…
- I admire (name the person) because…
- I feel serene when… I am most interested in….
- I am annoyed when…
- I disapprove of… I am optimistic when…
- I know I am loved when…

Resource + cards

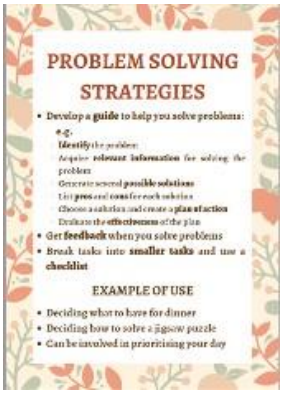
Time	Content	Actions
Wrap-up (10mins) Check-in	Facilitator	*In the last session we chatted about group boundaries. Would anyone like to add or amend any group boundaries after the work we have done so far? What do you think?* Finish each week with a chance to share the group's observations. For example: *What did you notice were the strengths of the group members? We are being detectives and searching for evidence of when we see someone showing their strength.* Ask the group to share what they observed about the group member sitting on their right-hand side. Ask them to say what they observed they did well, and then ask them to share with the group what they would like to work on personally.

Notes

Session 3

Goals

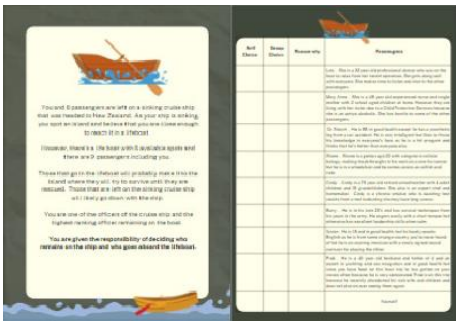
- To build awareness about emotions in social settings and thinking skills (planning/organising and problem-solving)
- To summarise how thoughts, feeling and actions work together
- To build trust between group members and share experiences
- To start building participants' awareness of strategies that work.

Time	Content	Actions
CRT (30mins)	Activity iPad	Ask participants to select and play a game from the problem-solving folder on the iPad, for example, Plants vs. Zombies games. Take note of how the group members use their problem-solving skills and validate their achievements whilst engaging with the games. **Reflection activity:** 15 minutes into the iPad games, discuss ways in which the group members have used problem-solving strategies in relation to the games. Ask group members to review the list of problem-solving strategies in the hand- out below and highlight the ones that are used. Facilitator Ask the YP: *In what situations would you use these problem-solving strategies in your everyday life?* Handout  PROBLEM SOLVING STRATEGIES • Develop a guide to help you solve problems: e.g. Identify the problem Acquire relevant information for solving the problem Generate several possible solutions List pros and cons for each solution Choose a solution and create a plan of action Evaluate the effectiveness of the plan • Get feedback when you solve problems • Break tasks into smaller tasks and use a checklist EXAMPLE OF USE • Deciding what to have for dinner • Deciding how to solve a jigsaw puzzle • Can be involved in prioritising your day **Problem-solving:** develop a guide to help you solve problems (e.g. identify the problem, acquire relevant information for solving the problem, generate several possible solutions, list pros and cons for each solution, choose a solution and create a plan of action, evaluate the effectiveness of the plan); get feedback when you solve problems; break tasks into smaller tasks and use a checklist when completed.
	Activity Resource + marshmallow spaghetti	**Challenge activity:** Marshmallow spaghetti tower activity 1. Split group into two teams or pairs 2. Provide each team/pair with an equal number of marshmallows and approximately same amount of dry spaghetti 3. Explain that the exercise is to see which team can use the materials provided to build the tallest tower within 5 minutes. The tower must be able to stand on its own. **Discussion point:** Ask the group: *How did you decide to build the structure the way you did?*

Time	Content	Actions
Bridging (15mins)		See if the group identify any other thinking strategies (e.g. memory of 3D figures from math class, the structure of the Eiffel tower). *How is problem solving useful in daily life?* **Facilitator reflection:** *A problem shared is a problem halved. Working collaboratively and involving other people to solve a problem can teach you different ways of thinking and possible solutions.*
SCIT (5mins)	Resource	*Our thinking skills, especially problem-solving, are also important in social situations. Problem-solving skills and understanding how our emotions can affect the way we connect in our relationships, can be used to solve a stressful situation. The next part of the program pulls these elements together.* (Remind the group of the SCIT triangle of thoughts, feelings and actions used in Session 1). *This group is about improving our social lives, so you might wonder why are we are spending time talking about emotions? The emotions we feel give us information, and this information helps us reflect and learn new strategies. These new strategies can help motivate us to achieve our goals in life.* **Discussion points:** *Our social interactions can bring up emotions. Your mood can also affect how well an interaction goes. So, if we want to improve*
	Activity Handout	*Let's move into the next activity where we'll explore emotions and our problem- solving skills together.* **Lifeboat activity:** *Ask one of the group members to read out the following scenario:* *You and 8 passengers are left on a sinking cruise ship that was headed to New Zealand. As your ship is sinking, you spot an island and believe that you are close enough to reach it in a lifeboat. However, there's a lifeboat with 6 available spots and there are 9 passengers including you. Those that go in the lifeboat will probably make it to the island where they will try to survive until they are rescued. Those that are left on the sinking cruise ship will likely go down with the ship.* *You are one of the officers of the cruise ship and the highest-ranking officer remaining on the boat. You are given the responsibility of deciding who remains on the ship and who goes aboard the lifeboat.*

Time	Content	Actions

SCIT (30mins)



Outline the rules for this activity as follows.

Part 1

1. Individually or as a group decide the order in which to save the people on the sinking ship.
2. Place an "X" next to the 6 people who will go in the lifeboat. Write
3. down the reason why the person was chosen.
4. During discussions, group members must share the reason

Part 2

1. As a group discuss the 6 passengers who the group will save.
2. Place an "X" next to the 6 people chosen to go in the lifeboat.
3. Note. Most likely, people are going to have differing opinions, but the group

Facilitator

Discussion points:

1. *What was your reason when you decided to leave a passenger on the sinking boat? Was it based on your emotions / values?*
   In social situations we can label, judge or stereotype people around us based on first impressions or limited information. Each of us needs to broaden our perspective of the people around us in order to connect and build relationships. The purpose of the Lifeboat Activity was to show that the survivors chosen were chosen because of their labels. Likewise, many of the people not chosen to survive were not chosen because of their labels.
2. *Why are these values important to you?*
3. *What happens if you don't agree with others' values and they're your friends?*
4. *What happens when your emotions drive your decisions?*
5. *What might happen when your values are misaligned in your relationships? Ask the group members to give an example.*

Our emotions can cloud our thinking and judgement. Focusing on how someone is feeling can help us come from a different angle and build a connection. It usually starts by saying, "I can see that must have been hard for you". Ask the group: How would you then describe your point of view?

For example, I can see that this must have been hard for you (name the problem), and I feel (name the emotion) because of (name the problem).

Wrap-up (10mins) Check-in

Facilitator

Today we explored the functions of our thinking and emotions. For example, we notice emotions and our values when we are trying to express our point of view. We're also using our problem-solving strategies to discuss a difference of opinion.

Ask the group to share what they observed about the group member sitting on their right-hand side, say what they did well, and then share what they would like to work on personally.

Notes

Session 4

Goals

- Explore organisational and planning thinking skills and apply these skills to everyday functioning
- Identify, practise and consolidate thinking skills
- Understand the range of intensity of emotions and how to be reflective
- Build self -awareness and understanding for others (empathy skills).

Time	Content	Actions

CRT (30mins)

iPad

Facilitator

iPad games activity: Ask the group members to choose a game from the 'Planning and organising' folder on the iPad.

Reflective activity: After 10-15mins, check in (individually or as a group) and ask group members to read the Planning and organising handout (see below). Ask them to tick which strategies they used and ones they need to practice. Discuss how planning and organising skills are used in their everyday life by asking *'Why is it important to plan and organise in our lives?'* Examples include planning for a holiday, planning and organising to apply for their driver's licence test etc.

Handout

Also, check-in with each group member about the goals that were established after the pre- assessment. For instance, if one of the primary goals is to improve planning and organising skills, it is advisable to review and assess progress in these areas during the individual catch-up. By evaluating the effectiveness of strategies and addressing any challenges or adjustments needed, will further

PLANNING AND ORGANISING STRATEGIES

- Use diaries, notes and 'to do' **checklists**
- Set **alerts** on phone for important tasks
- **Brainstorm** to see all options
- Break problems down into **smaller chunks** and write a step-by-step **plan**
- Find a **process** that can be used to plan for everyday activities.

EXAMPLE OF USE

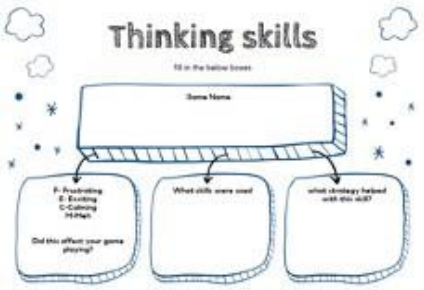
- Work on an essay
- Organise a date
- Keep track of appointments
- Plan meals for the week

During the iPad activity sit next to each group member and discuss:

- *How do you use your planning and organising skills?*
- *When could you use this skill in your everyday life?*

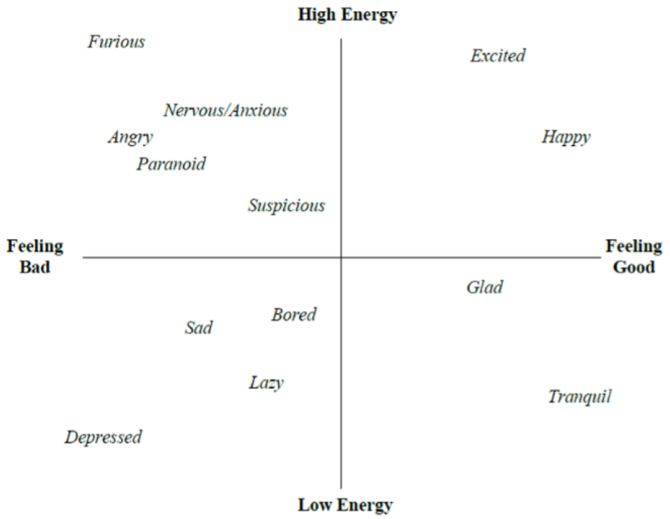
Handout

The **activity sheet** below is a guide to help group members reflect on their thinking skills either through a discussion or a written task.



Time	Content	Actions
Bridging (15mins)	Activity	**Lost at sea activity:** Ask the group members to read the story and rank the list of items from highest priority to lowest. There are three options as to how the group members can rank their items of importance. Ask the group members to choose which system they would like to use, i.e., draw a line between the ranking number and item, rank the item, or fill in the items in ranking order. **Group discussion:** *What organisation system was better to use and why? Why is it important to organise and plan in your everyday life?* For example, it helps us keep on track, be more efficient with our time etc. Also discuss what other thinking skills were used in this activity? For example, attention and concentration, problem solving, memory. *We use many thinking skills at once, and practicing the ones that we struggle with will improve our everyday life and make us stronger mentally.*
	Facilitator	Discuss moving into the next section by saying: *Another way that will make us strong in life is using our thinking skills with our emotional mind to help us navigate the world around us. We grow and change but sometimes we don't take a moment to understand what we're doing and how our actions may affect our social groups or relationships. To help us understand what strategies we use in our everyday life we need to stop and be a "detective". Being a detective is to "uncover the truth" and gain an awareness about ourselves and others.*
	Activity	**Rating different emotions activity:** *Let's uncover the truth about our emotional mind. Some emotions affect us more than others. Some require more energy, some require less energy. Now let's examine emotions that make us feel good when others do not. As detectives, let's determine where to place these emotions on this graph.*

Time	Content	Actions
SCIT (15mins)	Whiteboard Resource + emotion cards	Use the whiteboard and draw the graph (as below), placing high energy at the top and low energy at the bottom, feeling bad at the left and feeling good at the right. Hand out different emotion cards to the group members and give an example of locating the emotion on the graph in the appropriate place. Ask the group members to place their given emotion cards on the graph where they think it should fit. Example of where the emotions could be placed.
Wrap up and Check-in (15mins)	Activity Resource + lollies	**Discussion point:** *It's important to understand the different intensities of the emotional mind because of the way these emotions impact us and our behaviour. This can be difficult when the emotion is happening in real-time. So, the question is, how do we become aware of our emotional mind in present time? As detectives, sometimes we must stop, take a long deep breath and look at all the evidence. The next activity gets you to reflect on when you felt an emotion during the last week.* Lolly emotion game **Activity**: Ask each group member to choose a starburst lolly and, depending on the wrapper colour, share a time when that emotion was experienced. Questions to prompt them to discuss include: *What lead to that emotion? For example, what triggered the feelings?* See colour and emotion chart below: **Orange – an emotion that you have had this week** **Yellow - an emotion that you have witnessed in others** **Purple – a time that you laughed this week** **Red – a time you felt angry or irritated this week** **Pink – a time you felt low or 'meh' this week**



Notes

Session 5

Goals

- To consolidate attention and concentration thinking skills
- To identify ways to break down and comprehend information
- To introduce the concepts of social and personal bias
- To build awareness and observe when emotions/ judgements influence our decisions.

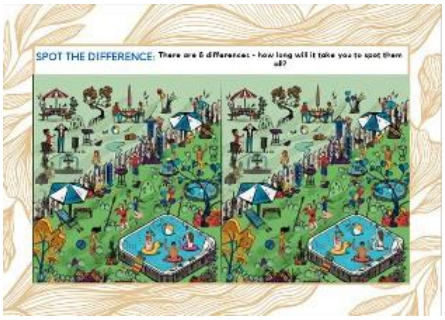
Time	Content	Actions
CRT (30mins)	iPad Facilitator Handout	**iPad games:** Ask the group members to choose a game in the 'focus' folder on the iPad. **Reflection activity:** Check in after 10- 15 minutes and discuss using these skills every day and how these skills/ strategies might be improved. Discuss personal goals, track how each group member is working towards these goals and revisit if the goal needs to be **Note:** This 'Attention and Concentration' Fact Sheet was discussed in Session 1. If the group facilitators ran out of time to cover this previously, this can be revisited in this session. Otherwise, as a group, review and discuss the attention and concentration thinking strategies and what strategies each member would like to do better to help their concentration or attention skills.
	Facilitator	Move onto the next activity by explaining that our thinking skills are used in everyday life, especially when work or school requires us to understand (comprehend) information and instructions. *Today we're chatting about learning styles. Learning styles are all about how we each learn stuff in different and cool ways. For example, some people like to read the newspaper, some go online, others wait to watch the news on TV, and others like to listen to the news on the radio. There are lots of different factors that can make learning and understanding easier or more difficult for us. What might work for me may not work for you and vice versa.* Ask the group members to notice what thinking skills they use when completing the following group challenge.

Time	Content	Actions

Handout

Challenge activity:

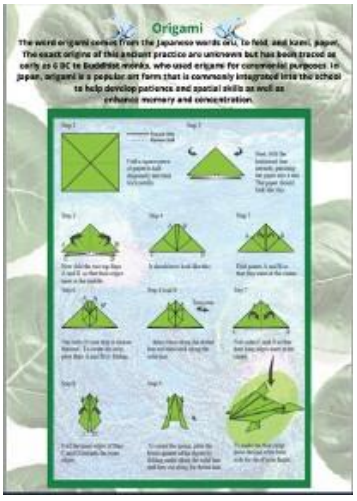
1. The first group member to spot all the differences between the images (i.e., Spot the Difference) will win the challenge and receive a point.
2. The first group member to follow the instructions and make a jumping frog (see handout below Jumping Frog Origami) will win the challenge and gain a point.



Note: This is a difficult process to follow. Discuss whether watching how to follow the instructions helps with comprehension and learning how to do something.

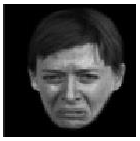
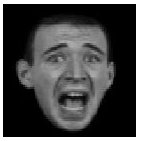
Show a YouTube clip of how to make Jumping Frog ORIGAMI JUMPING FROG (Traditional model) - YouTube

Resource
+ origami paper



Group discussion: *We learn and strategise how to complete everyday tasks in many ways. There is not one way that works for everyone – it's about finding what works best for you. To do this we need to investigate further and be the detective. Which activity did you like and why? Which one was hard and frustrating? What skills did you use in completing the task?*

The other app games were visual however the origami was a reading activity. What can you do when you're learning and prefer visual imagery? Identify strategies that work for your type of learning style, for example, Google search and identify if YouTube has any demonstrations.

Time	Content	Actions
CRT (30mins)		**Group discussion:** Normalise different learning styles. *There are many things I don't know how to do, but I have built my thinking skills to know where to search to get the answers.* Ask group members to share their thoughts: *Where do you start your searches to get the answers you need for an assignment or how to cook dinner?* For example, Google is a great place to start when you're trying to solve a problem *and you don't want to lose focus or avoid finding a solution. Although sometimes it can be overwhelming/full of incorrect information. How do you determine what to trust?* *Once you understand how to use these thinking skills it can expand your ability to manage many situations you face in your life.*
SCIT (20mins)	Activity	**Guess that emotion activity:** *We've been looking at our own emotions for the last couple of sessions. Now we're looking at observing emotions in others. The difficulty with this activity is that we can't hear the emotion. We'll be looking at faces and determining the emotion. Even though we're guessing the emotion we can use facial cues to help us get the facts about other people's emotions..* Anger  Sad Neutral Happy  Fear Disgust Place A4 pictures face down on the table and get each group member to turn over a picture. Ask the group member to objectively describe the facial expressions (i.e., mouth, eyes, eyebrows, forehead) before guessing the emotion. When a group member 'jumps to conclusions' about the emotion rather than describing first, ask them *Are you 100% sure your answer is correct? What makes the person look that way? What about the person's facial expression makes you think that?* **Group discussion:** Explore any stereotypes that the group may unconsciously bring up. For example: *Is Barbie a beauty or beast?* Our brains naturally categorise information and this helps make sense of our social setting. Ask the group members: *What do you think would happen if you totally believed and stuck to these beliefs or biases without fail? What would happen to your relationships? What would happen if you judged yourself in the same way?* Labeling/judging people reduces the ability to pick up and notice if that person changes. Ask the group: *Have you ever experienced being labelled unfairly?* For example, some YP are labelled as "naughty" and despite keeping out of trouble find it hard to change that label or judgement by others. To avoid judging others, use descriptions that show a curious or reflective mind. *Just like the detective, be the researcher and avoid jumping to conclusions.*

Time	Content	Actions
Wrap up and Check-in (10mins)	Facilitator	*Today we explored how our personal biases can cloud our judgement. We also looked at how important it is to be attentive and concentrate on tasks. By remaining in the moment and focusing on the task, you can be present rather than your emotional mind distracting you with your biases/judgements.* Ask the group to share what they observed about the group member sitting on their right-hand side, say what they did well, and then share what they would like to work on personally.

Notes

Session 6

Goals

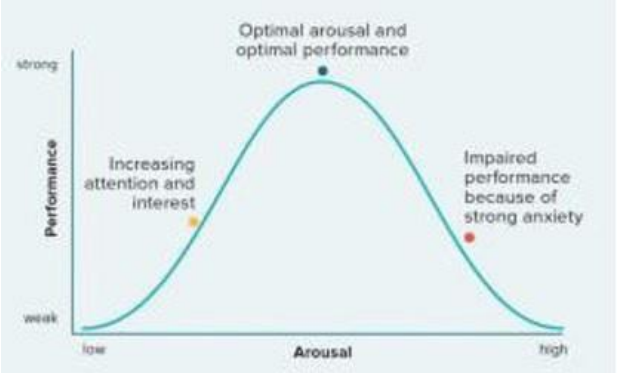
- Build our awareness about the way we learn and perform
- Identify ways to help our learning and performance skills
- Understand that suspicion and ambiguous feelings can impact on our relationships

Time	Content	Actions
CRT (30mins)	iPad Facilitator Handout	**iPad games:** Consolidate attention and concentration skills with the group members. Review how the group members use strategies to maintain focus. For example, thinking aloud, breaking tasks down into smaller sections. **Reflective activity:** Ask group members to use an iPad game and challenge them to compete against their previous score. Ask: *What game did you play, and how did you improve your score? Or What got in the way of you trying something new?* *How do you use these skills in your personal goals?*
	Activity Resource iPad	**Challenge activity:** Ask the group members to compete against each other on the iPad game '100 balls 'battle mode. The player with the highest score wins the challenge and a point. After the first round, stop and reflect about what strategies were used to get the highest score. For example: *What skills did you use? When you were competing, what did you observe in others? When you compete against someone, what happens to your concentration?* Why is it important to have attention and concentration in our everyday lives? For example: *When going to the grocery store, it may be helpful to go when it is less busy, or it may be handy to have a pen to cross off items so that you can focus on what you have left to buy. In the same way, it is important to focus when you're driving a car or cooking a meal.* Review the importance of the arousal and performance graph previously discussed in Session 1 (see below). Reflect on the intensity of arousal (or strength of emotions) and what happens to the level of performance if emotions are high. Discuss strategies to assist with concentration and attention skills (for example, move away from other participants, focus on touching the screen etc.).

Time	Content	Actions

CRT (30mins)

Resource



In a group, pass the below cards around and ask group members to fill in the question or statement on their card.

Resource

Facilitator

Group discussion and leading into the next activity. Group facilitators discuss the benefits of focusing attention and participating in a task or activity. Introduce the concept of mindfulness and discuss how focusing and participating in a task or activity assists with regulating emotions.

Facilitator

Remind the group about the SCIT of the triangle of thoughts, feelings and actions discussed previously.

Resource

We discussed previously how emotions, actions and thinking skills are linked together. Over the last couple of weeks, we've been defining emotions. Today we're focusing on one emotion: feeling suspicious. This emotion can have a big impact us.

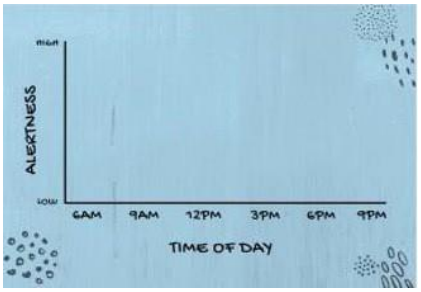
Time	Content	Actions
CRT (30mins)	Activity	**Brainstorm group activity:** *When and why do you become suspicious of another person or situation?* Validate answers when providing examples of the below situations: • dangerous situation (dark alley), unfamiliar • past behaviour (lying, cheating, stealing), ambiguous behaviour • Recent experiences of a scary movie, or past experience • Internal factors, such as lack of sleep, stress, anxiety, feeling guilty, symptoms of mental illness, for example, paranoid behaviour.
	Activity	**COVID 'Wink' activity:** Explain how the activity will go to the group. *Today we're playing a game where we'll be suspicious of everyone around us. Everyone will draw a piece of paper from an envelope. The paper will have written either 'Healthy' or 'COVID'. Only one person will have a COVID card. The one person who has COVID will be trying to infect everyone, but this is done only by secretly at them. The other group members who are 'healthy' will have to be the detectives or health authorities and will need to work out who is spreading the disease.* *The game aims to make eye contact with the person you're talking to. This is a great opportunity to get to know your group members. You will be talking and moving around the room. While you are chatting, the person who has 'COVID' will wink at you without the others noticing. Once the person has winked at you and moved away, wait a few seconds before you say, "Oh no, I think I have COVID'.* *While talking and making conversation, please remember to pay attention and work out who started spreading COVID. If you think you know who has started spreading COVID, raise your hand and say who you think it is and why. If you are incorrect, you're unable to make another guess and the game will continue.* *However, if you've guessed correctly, you will gain a point for the challenge. Good luck!* **Group discussion:** Following the game, once the COVID spreader has been identified, get the group to talk through how it went. *How did you work out who had COVID? We get information from all different sources, both verbal and nonverbal. What happens when this information doesn't match up?* (Give an example of mismatching signals) *Does it mean we should be suspicious about everyone? What if the situation wasn't clear and you were not sure what someone else was thinking or feeling? What would you do?*
Wrap up and Check-in (10mins)	Facilitator	*Today we explored how feeling suspicious can influence how we act in our relationships. Also, we reviewed our attention and concentration skills help us be in the moment and manage our emotions/bias. We also looked at how this can affect our learning and performance.* Ask the group to share what they observed about the group member sitting opposite and what they did well, and then share what they would like to work on personally.

Notes

Session 7

Goals

- To pay attention to self and others
- To develop concentration strategies to refocus
- To build self -awareness skills in relation to self -arousal and learning style
- To understand how sensory activities can regulate feelings and assist with concentration.

Time	Content	Actions
CRT (30mins)	iPad	Ask the group members to play iPad games together and explore how to pay attention.
	Facilitator	Use the below games to discuss divided attention: • Ask group members to choose the 'switch colour' game in the' warm up' folder on the iPad. After 10 minutes of playing the game, ask the group: *How did you manage changing your attention between colours and symbols? Was it easy or hard? What helped you to focus your attention? Did anyone feel frustrated or another emotion because it was hard to coordinate the dot or get through the colours/shapes/symbols?* • Get the group members to move onto the 'cook city' game. After 10 minutes of playing, discuss with the group how they were able to divide their attention between the tasks of cooking, serving customers and taking money.
	Facilitator	Following on from the iPad exercises, initiate a discussion about self - reflection. *Self-reflection is a tool that we can benefit from. For example, we reflect on how we play these games, which helps us think about how to improve it. Thinking about and understanding how we act makes us stronger and gives us the skills to help us achieve our goals. Has anyone had thoughts of wanting to build muscle or lose weight? By having goals, we can reflect on what's working to meet our goals, and what's not working for us.*
	Activity Handout	**Alertness tracking activity:**  To build their self-awareness, ask group members to graph their alertness across the day. Fold the paper into time sections and get them to do one column at a time. Ask the group to rate their alertness with a cross in the column of time. Once completed, unfold, and ask them to draw a line between each cross to track how their alertness has changed throughout the day.

Time	Content	Actions
Bridging (15mins)		Ask them to consider each part of the day in detail before they mark how they felt. For example, ask them to think how they felt when waking up: • *When you were in bed this morning, what is the first thing you remember?* • *Did you wake up peaceful or abruptly? Sunlight streaming through the window, an alarm blaring, or someone banging on the door?* • *What did you feel?* • *Were you hot or cold?* • *What was the first thing you did? Have a shower? Eat breakfast? Have a coffee?* • *Did you have to change your clothes? Was there a difference between the feel of your pyjamas and day clothes?* • *How would this be different if you were in your own home?* **Self-reflection:** Ask the group to self -reflect on their day: *When are the best times to learn? When is the best time to work towards our goals? When's the worst part of the day to focus?* Discuss that learning styles, attention levels and the ability to achieve goals may be impacted by: • *Time of the day: Some people are more alert in the morning and become less alert as the day progresses. How long do you think you can stay alert?* • *Learning style: Our learning can be linked to our senses, such as hearing, seeing, and touching. Some people prefer hands- on, some prefer to listen, and some others like to read the information. For some it might be a combination of these things.* **Discussion point:** *What factors help or get in the way of learning?* *What would you do if you had to meet your friend for coffee in the morning and you don't normally wake up until noon?* *What activities did you perform within your environment to change your state of arousal to become alert and ready for the school/workday? For example, a cold shower may be used to alert you and a hot shower may be used to calm you. As you can see, in the case of getting up in the morning, we subconsciously use our sensory experiences within our environment to change our state of arousal to be alert for the day ahead.* *How do you think your ability to remember or store information is affected by the level of your alertness?* *This ability to self-reflect will help you get tasks completed more effectively and understand how you learn best. This skill is transferrable to help in your social settings, such as reflecting on any ruptures in your relationships.*
	Activity	**Body sensation through the five-sense activity:** Today we want to look at the different senses that help you feel alert. Also, they can tell you when you're angry or tired and need to focus. Let's look at each of the following activities to see how they will affect your level of excitement and Ask group members to complete the Sensory rating activity below. Ensure that everyone is calm and settled before starting each separate activity.

Time Content Actions

Bridging (15mins)

- Do one activity at a time and highlight what senses are being activated.
- Rate each activity as either calming, agitating, or alerting
- Discuss how these strategies can be used and in what settings, such as school, travelling or everyday life.

Explore with the group what they discovered about themselves during this activity.

Facilitator

Wrap up and Check-in (10mins)

Today we're building your self-awareness about how you act, what triggers your emotions in your everyday life and to understand when our body sensations are alert, calm or agitated.

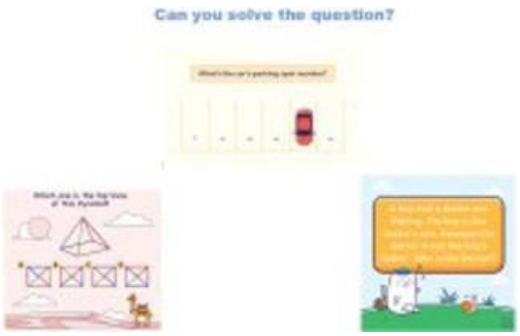
Ask each group member to share what activity helped them to feel calm and why they think this happened.

Notes

Session 8

Goals

- To build fact-finding questions and use non-judgemental language to describe situations
- To identify when we use personal bias in ambiguous or suspicious situations
- To use thinking skills in practical life situations and practise verbal and logical reasoning.

Time	Content	Actions
CRT (30mins)	iPad Facilitator	Ask the group members to open the 'problem solving' folder on the iPad and choose a game to play (e.g., Raymond Adventures, Puzzeldom, Plants vs Zombies, Lemmings, Swordigo, Triple Town, Watersort Puzzle). **Reflection activity:** After approximately 10-15 mins check in with each group member regarding their goal for the game and what thinking skills, they need to achieve those goals. For example: *What is the goal of the activity? What are the different ways you can meet your goals? How do you think this skill will help you in your everyday life? Your pre-assessment results showed you had difficulty with (e.g., working memory). How do you think this activity might help you in that area?* *In the previous session, we looked at when the best time of day for us to learn new information is and what strategies we could use to calm ourselves or make us alert. Also, what things were agitating.* **Group discussion:** Open a general discussion about what the group members remember about learning styles and how they differ.
	Activity Handout	**Challenge activity:** *The challenge for today is to use your problem- solving skills. I'm going to hand out a worksheet for you to solve the questions.*  After they have solved the questions, discuss how they worked on this challenge. To assist the discussion, ask the following: *What thinking skills did you use? Did your strategy change throughout the challenge? What thinking skill has worked well for you this week?*

Time	Content	Actions

CRT (30mins)

Discussion point: Review discussion from the previous session about problem- solving and bias.

To be able to solve problems, we need to be aware of our biases and how we might stereotype people. This influences our thinking and means we can jump to conclusions without looking at the facts. Using our attention and concentration skills can help us solve problems. We can also do this by talking with others to get a different perspective.

Refer to the SCIT triangle of thoughts, feelings, and actions.

Resource

In previous sessions, we focused on having high emotions in some social situations. Now we will spend time understanding and figuring out how social situations work. We'll discuss avoiding misunderstandings by thinking a bit more about our feelings and actions. To understand how misunderstandings occur, we will chat about what things can cause them. For example, 'jumping to conclusions' with our thinking. What does it mean when I say, 'jumping to conclusions'?

Activity

Resource + bag of items

Guessing game activity: Ask the group member to place their hand in the bag and describe their feelings without naming the object. When they think they know what it is, ask them to make the guess and rate how confident they are with their guess, out of 10. After the group member has made their guess, ask the other group members to say if they agree or think the answer is wrong. If they think the answer is wrong, ask what the object could be.

Group discussion: When people jump to conclusions, they often think they're right when most times they're wrong. Jumping to conclusions can also create bad feelings in themselves or other people. The reason why we jump to conclusions is when the facts are ambiguous or unclear.

Explain the biology behind jumping to conclusions: Robert Burton, a neurologist, explains why we jump to conclusions (and why it can be so hard to stop). According to him, our brains reward us with a 'feel good' hormone (dopamine), a chemical that makes us feel good. This happens whenever we recognise and complete patterns, whenever we fill in the gaps and reach an understanding about something. The problem is we don't have to be right to get this dopamine hit, we just need to think we're right.

Time Content Actions

Facilitator

Group discussion: *Describing or viewing a social situation neutrally will help us to be non-judgmental. The moment we start to have black and white judgements (e.g., she's lying, he's greedy), our outlook can be influenced by our emotions more than our logical thoughts.*

Ask the group members whether they've been judged before and in what situations this has happened.

Introduce the concept of ambiguous situations and provide an example of jumping to a conclusion that the group members can relate to. Also validate the group that this is what everyone often does.

Jumping to conclusions happens to everyone at some point in our lives We might think we know what is happening in a social situation but sometimes we don't know all the facts. In this last activity we're going to show you some photos and you're going to try and work out what you think is happening in each picture.

Resource

Guess what's happening activity: Show an ambiguous picture and ask group members: *What do you think is happening in this picture?*

Then show the same picture with more details and discuss.

The judgements and biases we hold about cheating shown in this picture highlight that we all jump to conclusions to work out and understand what is happening around us. However, this can lead us to misread the situation because the information is unclear or ambiguous. What else could explain this situation (with the couple holding hands behind the other man's back)?

Time	Content	Actions
CRT (30mins)	Resource	Second picture, ask the group members to say what they think is happening in this part picture, then reveal the full picture.

Discuss the judgements around this picture, such as stealing. Ask the group members what else could explain this situation. For example, the customer dropped the money and she's putting it back into her pocket, or they could be dating and she's grabbing a tissue from her partner.

Group discussion: Ask the group to share when they have observed someone jumping to conclusions and the social setting or context in which it occurred. When a group member raises an ambiguous situation, explore further whether there are other possible reasons or explanations.

When someone says or does something that is unclear, and you don't know whether the person means harm, it can be an ambiguous situation. For example, you see someone get off at the same train station and they offer you a lift home. Should you feel suspicious or is this an ambiguous situation?

After the group has answered, ask for examples of suspicious and ambiguous situations like this.

Wrap up and Check-in (10mins)	Facilitator	*Sometimes, stuff can get confusing, like when things aren't clear and could mean different things. That's called an "ambiguous situation" and it's like a big question mark in your brain. And then there's this other thing, when we quickly decide what's happening without really knowing all the facts – that's "jumping to conclusion". It's like making a snap judgement before you've got all the puzzle pieces.* *In our relationships we may act without taking a moment to reflect and problem- solve. There may be other reasons to explain what is going on. Problem-solving can involve writing things down and brainstorming possible solutions. Building your self-awareness about how you think, feel and act can help your relationships with others.* Ask the group to share what they observed about the group member sitting on their right-hand side and what they did well, and then share what they would like to work on personally.

Notes

Session 9

Goals

- To consolidate strategies for problem-solving and developing the ability to think constructively (verbal reasoning)
- To use problem-solving skills in practical life situations
- To build skills in seeing different perspectives and developing other ways to view problems
- To define the difference between making guesses and jumping to conclusions.

Time	Content	Actions
CRT (30mins)	iPad	*Last session we focused on problem-solving skills, and we'll continue exploring problem-solving today.* Instruct the group members to play the 'Jigsaw HD' game from the focus game folder on the iPad.
	Activity	**Challenge activity:** Explain that this is a challenge activity and points will be awarded. 1. Open the app and decide which picture puzzle they will complete as a group. Once 2. the puzzle is chosen, ask the group to set the number of jigsaw pieces to 42 and get everyone to start the puzzle together! 3. Explain that the person who completes the puzzle quickly will win the challenge and awarded points.
	Facilitator	**Reflective activity:** Return the group members to playing games from the problem-solving folder on the iPad. While playing the games, the group facilitators will individually connect with each group member to discuss the main goals of the game and what thinking skills they have used in the iPad games. For example: *What is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?*
	Activity	**Challenge activity:** *For this next activity we're using our detective skills to problem-solve and we may see things differently from the other group members. This activity is another challenge, and points are awarded.*
	Handout	1. Instruct each group member to record their answers for the activity on the blank worksheet below.

Time	Content	Actions
CRT (30mins)		2. Assign each group member to a station and say that they will then take turns moving around to each station. Place one of the following pictures at each station. 3. Ask each group members to look at the image at their station and write down what they see. 4. Repeat steps 1-3 for each image by moving on to the next station. 5. Once everyone has attended each station, discuss as a group what they wrote down about that they saw and then show the group how each image contains multiple elements. 6. Draw out with the group how this shows that people can see the same thing differently – they can have 'different perspectives.' Discuss: • *What did you see at station?* • *Did everyone see things differently?* • *Are both perspectives correct/valid?* • *How does it feel to have different perspectives?* **Discussion point:** *Each image in this activity is an optical illusion. Each image contains multiple elements, and people may see different elements in each. For example, this image is of both a duck and a rabbit. The duck's beak is the rabbit's ears.* *This is about how we all see things differently. People can also see the same situation or problem very differently to others. Although people's viewpoints may differ, there is some validity to all points of view. In other words, each person deserves to have his or her point of view heard and considered. A different perspective may also change your point of view.*
	Facilitator	Introducing the next activity, highlight that people view situations differently, and the thoughts and feelings that each person has in a situation may also differ. *In the previous session we examined how 'jumping to conclusions' can lead to misunderstandings or unpleasant feelings. However, it is important to know* *that there is a difference between 'making an educated guess' and 'jumping to conclusions'. Sometimes we need to make an educated guess to develop our awareness and help us build our relationships with other people.*
	Activity	**Personal bias differences activity/discussion:** Draw the below table on the whiteboard (with headings only) and ask group members to write down (on sticky notes) what they think the differences are between jumping to conclusions and making guesses?
	Resource	Some prompting questions may include: *What do people say when they are making guesses? How is it different if they are jumping to conclusions? How do they sound? What do you think they are basing their decisions on? etc.* Discuss with the group some of the answers listed in the table if these points have not been raised, highlighting the negative aspects of jumping to conclusions.

Time | Content | Actions

SCIT (10mins)

Whiteboard + sticky notes

Making guesses	Jumping to conclusions
You see several different things that might be true	You assume one thing is true
You know your guesses might be wrong, but you might be right as well	You feel confident that you are right
You are slow to decide	You are quick to decide
You talk like you are unsure	You talk like you are sure
You don't risk anything if you are wrong	You risk creating bad feelings if you are wrong

Wrap up and Check-in (10mins)

Facilitator

Today we explored problem-solving and understanding different perspectives to avoid making mistakes in our relationships. We also looked at how jumping to conclusions can have negative aspects. In the next session, we'll explore three common ways that people can jump to conclusions.

Ask the group to share what they observed about the group member sitting on their right-hand side and what they did well, and then share what they would like to work on personally.

Notes

Session 10

Goals

- To consolidate problem-solving skills
- To build awareness in identifying when people jump to conclusions
- Continue to build reflective skills

Time	Content	Actions
CRT (30mins)	iPad	Encourage group members to choose a game from the problem- solving folder. For example, Multi maze, Egg, Cooking city, Puzzle retreat, Pipes Plumber or Untangle.
	Facilitator	**Reflection activity:** While the group members are playing the games, the group facilitators will individually connect with each group member to discuss the main goals and thinking skills used in the iPad games. For example: *What is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?* In the last 10 minutes, ask the group members to play the 'multi maze' game and see who can get the highest score!
Bridging (10mins)	Activity Resource + stress balls	Challenge activity: *This is a challenge activity using our problem- solving and your ability to practically apply your knowledge to help you win the challenge.* Hungry hippo activity: Explain that stress balls will be placed in the middle of the desk, and the person who collects the most balls with the most points wins. Different balls have different points: the small balls are 1 point, and the bigger balls are 5 points. Any aggressive play will be docked 3 points. The activity will have 2 rounds, and points will be given for each round. Ask the group members to turn around and not look at where the group facilitators will place the balls. Explain that there are plastic bags around the room to gather the balls, if needed. The group members will have to determine if they can leave the game to get the plastic bag. After one round of the activity, ask the group to explain what thinking skills they used. For example, • Does it matter where you are located around the table? (validate group members' responses and reflect on the thinking skills needed, such as planning and organising skills used) • How did you prioritise which balls you collected? (Validate and reflect on the thinking skills, such as scanning, problem-solving skills etc. used) • Is there anything you would do differently if we do the activity again? • Can you think of an example of a time when you had to do a job quickly and thought 'where do I start?' Ask the group members to play again. The winner of the second game can choose an iPad app/game (rated PG) for the facilitator to download for the following session, or the winner can consult with the broader group to decide which app/game to download. Ask the group for feedback after the challenge: Did anyone have thoughts of blaming themselves for their bad results? Did you feel angry or upset that other got more balls, or was it no big deal?

Time	Content	Actions

Facilitator

In the previous session we discussed the difference between jumping to conclusions and making educated guesses. When you look back at your life and think about some of your unhelpful choices, you might wonder why you made those decisions. Looking back now, you might think they were poor decisions.

We will probably continue to make both helpful and unhelpful decisions in the future. However, you can better understand the process behind these choices.

Several factors contribute to people making poor choices. Knowing how these processes work and influence our thinking can help us, and knowing how these processes work and influence our thinking can help us make better decisions in the future.

Today we will focus on the common ways people jump to conclusions. There are three main characters: Blaming Bill (this character likes to blame others), My-Fault Mary (who likes to blame herself) and Easy Eddie (who likes to blame bad luck or the environment or situation).

Resource

Remind the group about the SCIT triangle of thinking, feeling and actions.

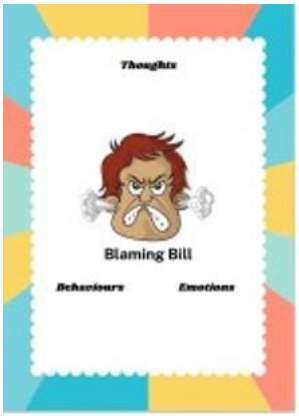
Each character responds or 'takes action' differently depending on their thoughts and feelings.

Activity

Matching activity: Show the different faces for each character. Ask the group members to use their problem-solving skills to match each character to a thought, feeling and action.

- Blaming Bill: always finds somebody to blame when bad things happen (thoughts), usually feels angry (feeling), angry facial expressions and points his finger at others and usually says, "This is your fault" (action).

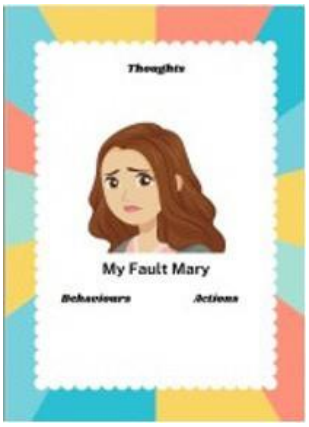
Resource



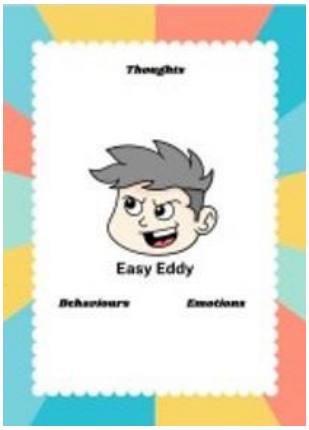
Time Content Actions

Resource

- My-fault Mary: blames herself when bad things happen (thoughts), usually feels sad and upset with herself (feeling), has a sad facial expression, looks down and shakes her head, holds her hand to her head and says, "I'm so stupid and I mess things up" (action).



- Easy Eddie assumes bad things happen because of bad luck and accidents. No-one is at fault when bad things happen (thoughts), pushes away emotion and tries to appear relaxed and easy (feelings), shrugs his shoulders and tilts his head to one side, raises his eyebrows and says, "I guess it was bad luck" (action).



Role play activity:

Select which 3 group members will play the characters. The other members will be the 'audience.' Using an app design to create a spinning wheel with the three characters. To assign the characters, ask each group member to spin the wheel without anyone else seeing. Once the group members have been assigned the qualities of each character, explain that the group will be role playing each character in a different social situation. The group facilitators will give an example using the example of a car accident. *In my role play, I would show anger on my face and point to the other car, saying "you caused this accident and I'm going to sue you".* Ask the group members to guess which character you played and confirm that the role play was 'Blaming Bill'. Also encourage group members to be creative.

Once they've been assigned a character, flip over the card that will tell the group members about the scene for the role play. For example, a car accident. The audience must guess which character is being role played. The first group member to guess correctly will receive a point.

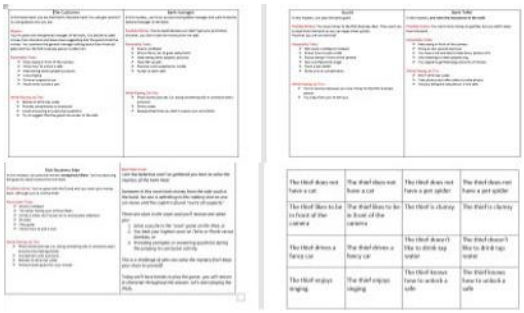
Time	Content	Actions
CRT (30mins)	Resource	After the role play, ask the audience to flip over the playing cards and answer the questions below: • What are the positive and negative qualities of each character? • Do you know anyone like Bill, Mary or Eddie? • Are there situations in which you have been like Bill, Mary or Eddie? • What character would you like in a friend? **Discussion point:** It may be helpful to have a way to explain Easy Eddie's negatives, as most people prefer his approach over the angry approach of Bill or the self-blaming approach Mary. Make sure that the positives and negatives of each character are discussed equally. For example: *Being 'relaxed' and 'chill' like Easy Eddie might lead to missing out on great moments of achievement, such* *as scoring a try and not getting excited but just saying it was just lucky that he caught the ball and crossed the score line.*
Wrap up and Check-in (10mins)	Facilitator	*Today we consolidated problem-solving skills and explored three common ways people react when jumping to conclusions.* Ask the group to share what they observed about the group member sitting on their right-hand side and what they did well, and then share what they would like to work on personally.

Notes

Session 11

Goals

- Practise relating problem-solving and planning/ organising skills to everyday life situations, and link problem-solving and planning/organising strategies to iPad exercises
- Introduce listening skills and practice memory skills
- Understand three general ways that we jump to conclusions and relate this to everyday life.

Time	Content	Actions
Introduction 2- 3mins	Activity	**Challenge activity:** *Today's session will be run differently, as the challenge activity is a mystery game. We must solve the mystery of a bank heist by gathering evidence and working out who stole the money. Each group member will play a different role. We'll go through who the different characters are shortly.* (see below character scripts and clues)
	Facilitator	*We will speak to each of you about what role or character to act out throughout the session.* **Note:** During this activity, it is important to encourage and validate group members when you notice them being a 'detective' or 'researcher' (for example, skills involving listening, paying attention, and remembering cues) and demonstrating curiosity about what they notice.
	Resource Handout	
	iPad	Ask the group members to play one game from the iPad folder involving problem-solving or memory skills. While playing, the facilitators will move around and speak to each group member separately about the bank heist activity and the assigned character to play in the activity challenge (bank heist). During these individual discussions, ask the group member to think about strategies to remember the details of the character they are playing. Once the group facilitators have spoken to everyone, return to the group. **Group discussion:** *Today we'll have breaks from our normal activities to play this mystery game, but you must remain in character throughout the session. I would like to go around the room today and for you to introduce yourself.* [After introductions] I've gathered you here to solve the mystery of the bank heist. Someone in this room took money from the vault in the bank. No one is admitting to the robbery, and no one can leave until the culprit is found. You're all suspects! *There are clues in this room and you'll be given one clue if you:* 1. *Solve a puzzle in the 'Room' game on the iPad, or* 2. *You beat your highest score on Tetris or Plants versus Zombies, or* 3. *Provide examples or answer questions during the 'jumping to conclusions activity'.*

Time	Content	Actions
CRT (30mins)		*This is a challenge, who can solve the mystery first! But remember, you need to keep the clues you work out to yourself!* *Let's start playing the iPads and choose a game from the problem- solving or memory folder. Now let's start collecting clues. Good luck!* **iPad games:** Problem-solving (The Room, Tetris, and Plants versus Zombies) and memory skills.
Bridging (20mins	Facilitator Whiteboard	10-15 mins into the CRT session group facilitators will prompt the group members to think about the strategies to solve the mystery. Ask the group members to say what they've achieved in the iPad games and their strategies to remember any clues. Give out some more clues about the thief (see resource above). Remind the group this is a challenge and the winner who identifies the thief will gain a point. If the person playing the thief is not identified, they will get a point. Ask the group to keep the clues secret and observe characters' actions. *Let's chat about our strategies. What thinking skills are we using?* (e.g., problem solving, attention, organising and planning, memory) *How will you use these thinking skills to solve the mystery?* Answer: Gather evidence, ask questions, observe, avoid jumping to conclusions, separate facts from guesses, write down your thoughts. *You'll receive clues that will frame what questions you ask the characters. For example, if the clue says, 'my favourite colour is pink', how will you find out who likes pink?* Listen to answers and validate responses. *How will you remember what the character says?* Group facilitators can prompt the group to create a table. Draw an example on the white board and give everyone a piece of paper to record their table. *For example, when the answer to the clue is a yes, mark a tick in the column opposite the character's name. When the character says no to the clue statement mark a cross. The character with the most ticks is the culprit.*

Characters	**Clue 1** **I have a cat**	**Clue 2** **I drive an expensive car**	**Clue 3** **I drink tap water**
Customer			
Bank Manager			
Rich Businessman			

Time	Content	Actions
SCIT (15mins)	Facilitator	After they have been playing the iPad games for 35-40 minutes, stop the group and reflect on some of the mystery game characters, giving them more clues about the thief. *Before we continue, let's think about how each of our characters behaves, and what sort of person they are. Each of your characters has been assigned a 'jumping to conclusions', or JtC, character type - either Blaming Bill, Easy Eddie or My-Fault Mary* (note: group facilitators may need to remind the group about the qualities of each JtC character type). *We talked about these in the previous session. Let's go around the circle without revealing who the thief is, identifying which JtC character you think everyone is playing and why.* Give out more clues with the correct answers about the JtC characters. **Group discussion:** *Who's been able to gather some more evidence? What facts have you found out?* Draw the answer from the group and assign points to the group members who guess correctly. Note: If the group member guesses a character ask why and explain the facts (i.e., the clues).
Wrap up and Check-in on progress (10mins)	Facilitator	*Today we used our thinking and our questioning skills to solve a problem. Everyone worked hard to use their memory skills to identify characters jumping to conclusions.* *At this point of the program, we like to check in with everyone about how it is going, what you enjoy so far, and what you'd like more of.* Ask the group members to give their feedback about the group and the overall program, and to reflect on what the group is about, what they enjoy, what they don't enjoy, and what they think could work better or be improved.

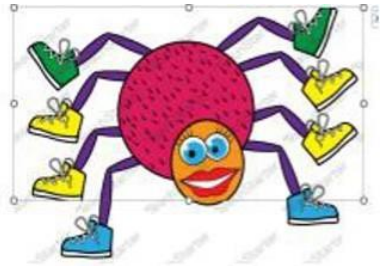
Notes

Session 12

Goals

- Review and explore further how to understand the actions of others rather than jumping to conclusions
- Discuss building trusting relationships and accountable actions, and the consequences of each
- Build communication skills, consolidate memory strategies and practise paying attention to information
- Explore strategies we use in everyday life to help us remember important information, and build self -awareness through observation of our actions.

Time	Content	Actions
CRT (30mins)	iPad	*Today we're going to build on your memory skills which you used in the mystery game in the last session.*
		Ask the group to explain how they remembered the different aspects of their Bank Heist character. Discuss how writing down information can help with our memory.
		Instruct group members to choose a game from the memory folder on the iPad.
	Facilitator	**Reflection activity:** Individually check in with each group member and validate their use of skills to improve memory. Discuss goals and thinking skills used in the iPad games.
		For example: *What is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?*
	Activity	**Challenge activity:** This activity involves listening to instructions about how to draw a spider.
		Introduce the bridging activity and explain that the thinking skills needed include memory skills. Before beginning the activity discuss one memory strategy that will help participants pay attention and remember information.
		Remind participants that this is a challenge and assign points for the overall drawing and for paying attention to the instructions.
	Resource + coloured pens	*So today we're going to draw what we **hear**. Let's listen first to what I tell you to draw before we start drawing. I will read out the instructions of how to draw a spider.*
		The group facilitator reads out the following instructions for drawing the spider. • *This is a spider, and it is placed in the middle of your page* • *The picture takes up 70% of the sheet of paper* • *The spider has a pink body* • *The body has small black hairs over it* • *The head is in the front of the body and is facing you* • *The head is 20% the size of its body* • *The head is orange in colour* • *The spider has two eyes on top of the head, that are blue with black eyelashes and pupils* • *Its open smile takes up half the face and it has big red lips* • *The spider has eight long, skinny legs which are purple* • *Each foot has running shoes on.* • *The front two feet have blue shoes on, the middle feet have yellow shoes, and the back two are green.*

Time	Content	Actions
Bridging (15mins)	Resource	When the group is ready and before reading the instructions out a second time, and the group facilitator prompts the group that there's an extra piece of paper right there for them to jot down notes during the activity. Indicate where a spare sheet of paper is located.  **Discussion point:** Show the picture of the spider and discuss similarities to the original and what the group drawings look like. Validate when a group member uses strategies to help them remember, such as making eye contact when listening to the instructions, repeating the instructions, asking questions, etc. At the end of the activity, ask the group to give examples of when it's important to pay attention in your everyday life and ask the group for their own examples. Ask the group to identify strategies that assist them with remembering information. For example, making eye contact, paraphrasing what is being said to them, and asking questions when given an instruction. Discuss the differences in the group drawings. *Even if we're paying attention to the information, we may interpret things differently. It's always important to clarify, especially in our relationships. In a relationship that you have can you remember a time when you have misunderstood someone, or they have misunderstood you?* *How do we reduce misunderstandings like this? We can paraphrase, or re-state what the person has said, so we can check with the person that we've heard and understood them correctly.*
	Resource	*In continuing today's theme of paying attention to conversations, we'll watch a Love Island America clip. Let's set the scene: Jordan is having a conversation with another contestant, Anna. Jordan has had a change of heart about her. The background story is that Jordan asked Anna to be his girlfriend only a few days ago. We'll start the scene where Jordan confides to a friend in the villa that he had feelings for another contestant.*
	Video	See video link: Love Island fans accuse Jordan of 'cheating' after explosive row (digitalspy.com) After watching the scene from Love Island, the groupfacilitator will read out a list of statements and ask the group to decide if the statement is a 'fact 'or a 'guess' based on what they have seen.

Time | Content | Actions

Resource

Whiteboard + butchers paper

Draw a table below (with headings only) and ask the group to place the statements under the facts or guesses column. Then ask the group to name the feelings or emotions Jordan might have experienced.

Facts	Guesses	Feelings
• Jordan is interested in another Love Island contestant • Jordan has not told his partner • Jordan and Anna are a couple	• Jordan likes India • Jordan is a player • Jordan is cheating on Anna • Jordan asked Anna to be his girlfriend so he can get through to the finals	• Hurt, • Angry, • Confused • Stressed • Anxious • excited

Ask the group to explore the pros and cons of making guesses. Explore what happens in a relationship when someone leaves without verbalizing the feeling (e.g., anger, hurt). Ask the group to share a similar situation and discuss unresolved feeling and what can happen to the relationship or explore any relationship regrets.

Activity

Resource

Optional activity: If you have time in the session, explore the concept of 'being accountable' (e.g., willingness to accept responsibilities). Sometimes it is not OK to simply omit to tell the truth rather than owning up and telling the truth or being accountable for your actions. This can be done using the following exercise.

Print off 2 x A4 pages, one with the word 'Omitting the truth' and the other with 'Telling the truth'. Place these on the floor at either end of a hypothetical line across the room. Ask group members to place themselves on the line where they expect to be treated in their relationships, whether they are happy to omit the truth at times if necessary or want to be truthful all the time. Discuss why it's important to have accountability in relationships. **Answer:** It helps form connections, security, and safety.

Discussion point: *What happens if someone omits the truth in a relationship?* Give an example of a partner not telling group members that they chatted to an ex-partner? If the group members say it's ok, add to the story and say that their partner saw the exchange and now doubts trust in the relationship.

Ask the group what the consequences are of not trusting others **Answer:** It is difficult to form trusting relationships and feel good about yourself.

Ask the group the consequences of never lying, or only telling the truth

Answer: If you trust everyone you won't see when someone is lying to you. You might be seen as naïve, and people might take advantage of you.

What are the costs of lying?

Answers: If we lie to others, we can't be truthful with ourselves, our friends, family, or anyone. You can't express your true self if you can't own what you do, think, or feel. If you blame others - society, the world and life in general - for your problems and struggles, you will be handing your life over to those things. You have the power to change your life and it starts with being honest to yourself, loving yourself and taking accountability for your actions.

Time	Content	Actions
SCIT (30mins)		*What are the pros of lying?* Answers: Lying can be a way to avoid punishment, to hide a benefit or reward, protect someone from harm, for self-protection, to maintain privacy, for the thrill of it, to avoid negative consequences, to be polite. Ask the group members: *How truthful would you like to be in your future relationships?*
Wrap-up and check in (10mins)	Facilitator	*Today we explored paying attention to our conversations to help with our memory skills. We also discussed breaking down what are the facts and what you are only guessing. This will help us in our relationships and reduce our emotional intensity, so we minimise misunderstandings and conflict. We also discussed accountability and what we need in our relationships to feel safe.* Ask the group to share what they observed about the group member sitting on their right-hand side and what they did well, and then shar e what they would like to work on personally.

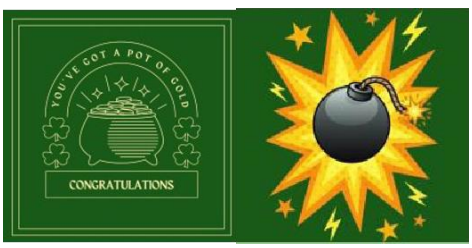
Notes

Session 13

Goals

- Understand how our values shape our actions/ emotional bias
- Discuss and practise empathy: how to listen to the other person and see things from their perspective
- Enhance active listening, trusting relationships and communication skills.

Time	Content	Actions
CRT (30mins)	iPad Facilitator	Revise memory skills and learning strategies. If appropriate, assign points for correct answers. Hand out iPads and ask the group members to choose a game from the memory folder (e.g., 'Can You Escape?,' 'Memory Match,' 'Memorama'). **Reflection activity:** Individually check in with each group member and validate their use of skills to improve memory. Also, discuss goals and thinking skills used in the iPad games individually. For example: *What is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?*
	Facilitator	*In previous sessions, we discussed strategies including problem- solving, planning and organising, memory, attention, and concentration. We've also looked at how these skills can be applied in our everyday day lives and relationships. We've completed activities that combined our thinking and social skills.*
	Activity Resource + blindfold	*In the last session, we talked about accountability, lying, trust, and how misunderstandings can occur.* *In our activities today, we'll investigate our values and the idea of 'perspective taking' – of looking at things from another person's point of view. We will also work on strengthening our listening skills. These skills are important if we want to understand another person's point of view and to communicate our point of view.* *How does listening help us in our relationships, work, school, and custody?* **Answer:** For example, listening builds connections, empathy, a sense of relating, feelings of support, strengthens your relationships. **Challenge activity:** Let's explore how we use our listening skills and trust in our relationships.



Time	Content	Actions
Bridging (15mins)		*This activity is called 'get-it-together' and involves two-person teams, with one member being blindfolded and the another tasked to guide the blindfolded person through a maze. In the middle of the room is tape on the floor setting out a space of about 3 square metres. Inside the square there are various markers on the ground with images representing pot of golds or bombs. You will be blindfolded, and your partner (who's not blindfolded) will give you directions to get through the maze and retrieve as many pots of gold as possible. If you step on a bomb or outside the taped area, you must stand still for 10 seconds. The partner giving instructions may not enter the taped off area inside the square.* *The winner of the challenge is the team who have collected the most pots of gold. A point will be given to the winners of each round. Good luck!* The team member providing the instructions cannot see where the facilitator places the pots of gold and bombs until the game begins. The group member who is being guided through the maze is given 10 seconds to try to memorise where the items are placed inside the square, before putting on the blindfold. The more two-person teams playing, the more complicated and challenging the game. When it becomes virtually impossible for teams to communicate and navigate, or once all the objects have been retrieved, the game ends. **Discussion point:** Once the game has ended, ask the blindfolded group members to talk about their strategies to listen to their partner. **Answer:** For example, answer in a way that lets him or her know you are listening, trusting their direction, trying to hear what the person is saying even if you don't agree. Being a good listener takes effort and practice. Try switching the roles within each team after every round so the members can practise their memory, focus, and listening skills and learn more about their own and others' behaviour in challenging situations. The more chaos by the end, the better! **Discussion point:** Building focus helps team members concentrate on the person they communicate with despite potential distractions. *How do these skills (active listening and memory) relate to everyday living with regards to work, school assignments or relationships?* **Answer:** For example: reduces misinterpretation, increases connection and understanding of the task.
	Activity	**Say It Out Loud activity:** *The next activity continues with the theme of active listening and seeing a different point of view. In our lives, we'll meet people with different perspectives as they have had different experiences in developing these opinions, values, or biases. Let's look at some beliefs that you may feel strongly towards. Let's look at a few questions and say if we're for (use a thumb up) or against (use a thumb down) each one. For example, if I say, "Marijuana should be legalised", would you agree or disagree? Think about what it is about your values that helps you make that decision?* Discuss the following topics and similar questions with the group. • Should animals be used f or research? • Should men get paternity leave from work? • Should same-sex couples marry?

Time	Content	Actions
SCIT (30mins)		**Discussion points:** *our beliefs influence how we think, feel and act. Beliefs can change with our personal experiences. Beliefs are rules we give ourselves about our behaviour and that of the people around us and are generally formed when we're a child. Beliefs work below the surface of our awareness, so we don't often consciously think about them. Would you change any of your beliefs?* **Note:** When a group member jumps to conclusions, politely inquire about what are the facts versus the belief or opinion. **Discussion points:** *Today we discussed some interesting points of view and perspectives. When you disagreed with someone, how did that make you feel? For you to feel trust, does the other person need to agree with you? If they didn't, would you get angry, such as stop talking to them or raise your voice? We'll continue to explore this next session. For now, let's listen, validate, and share what makes you feel differently to other people's opinions/beliefs and biases.* **Debate Activity.** *Who would like to debate an unknown topic? You won't know if you agree or disagree with the subject. We need two people, one to be for and the other against .* 1. Ask the debaters in the group to choose a piece of paper that will indicate if they are for or against. 2. Instruct the debaters that they have one minute to argue their point of view either for or against the statement 'Cheating is out of control.' 3. The debaters have 3 minutes to write down their arguments. The person 'for' will talk first and the person 'against' will listen. 4. After one minute, the person 'against' will speak, with the person 'for' listening. 5. The other group members will be assigned to help the debater formulate the response.
Wrap-up and check in (10mins)	Facilitator	*Today we learnt that it's ok to have a different opinion and it doesn't mean you have to make the other person agree if they're voicing a different opinion. Understanding it's their choice and it's ok for a friend, someone in your family or your class to think differently from you. We don't need to be in conflict or get angry or try to change their minds. Understanding the facts and what other people believe can bring you closer together and make you appreciate how they made a decision, even though you might not agree with them. Listening actively helps us navigate conflict in our relationships. It also helps us understand what is being asked of us in our work, assignments, and relationships.* Ask the group to share what they observed about themselves in today's topic. *Please share one thing that challenged you today, or that you could relate to. What would you like to do better in your everyday life?*

Notes

Session 14

Goals

- Consolidate and review concepts in the program
- Building strategies to assist with memory and linking these skills to everyday living
- Developing understand and identifying positive attributes in others

Time	Content	Actions
CRT (30mins)	iPad Facilitator	Instruct the group to choose an iPad game from the memory folder. **Reflection activity:** Individually check in with each group member (10 minutes into the activity) and validate their use of skills to improve memory. The facilitators will individually connect with each group member to discuss goals and thinking skills used in the iPad games. Start to be specific about what's important to the participant. For example, they may want to better remember appointments or a loved one's birthday date. **Group discussion:** *How do we use memory in our everyday lives? Are there other strategies we use to improve memory?* **Answers:** For example, listening, repeating information you need to remember, looking for patterns?
	Activity Resource	**Challenge activity:** *Today's activity will be using what we've learnt about our thinking and social skills. It will involve us gathering the facts about a situation. We will do this activity in two groups, some of you will be in Group A and the others in Group B. There are five different stations around the room. We'll complete different tasks at each station and collect clues as we go. The answers to each clue will lead us around the room. This activity is like a paper chase. One point is to find a clue and another if they work out where to move next.* **Note:** Group facilitators validate when a group member uses thinking strategies, such as, the 'think-aloud strategy' (e.g., verbalizing your internal thinking to show connections and prompts that should be going on in the group member's thinking). If a group member guesses the answer, explore the reasoning behind the answer and validate what thinking strategy was used. Also, please remove the station numbers beneath the pictures, as this serves as a guide for facilitators. A group facilitator will be assigned to each group. The activity will start by asking the group a question that will direct them to their first station: **Group A:** *Sometimes our beliefs can cloud our judgement. To stay neutral, what should we look for?* **Answer:** Be a detective, look for the facts. The group facilitator will ask what picture around the room represents a detective. Group A will start at station 1 and work to 5.

Time	Content	Actions

Group B: *What thinking skill have we been working on?*

Answer: Memory. The group facilitator will ask what picture posted around the room represents memory. Group B will start at station 5 and work backwards to 1.

1st station: (Picture of a detective)

Reading emotions activity: Group members will be presented with different images of a face at different stages of anger. They are asked to put the pictures into a sequence showing the level of anger building, starting from neutral and developing to full anger.

Discussion point: *Why is it important to notice facial expressions in others? Why is it important to be able to read the 'early warning signs' of an emotion when it is developing?* Prompt members to identify the skill that was targeted here (identifying emotions) to take them to 2nd station.

Resource
+ paper plates, straws, cups, tape

2nd station: (Picture of angry emoji)

Problem-solving activity: In this activity, the group will be using problem-solving skills.

You are packing up your picnic by the river when you see a brood of baby chickens have been separated from their mum. She is waiting for them on the other side of the river. You are determined to reunite the baby chickens with their mum, but you only have picnic things, paper plates, cups, straws and some tape. You have a limited amount of time before the rain starts pouring down. You have 5 minutes to make the longest "bridge" that you can allow the baby chickens to cross back to their mother.

Discussion points: *In what situations will you need to problem solve under pressure? What steps are important to solve the problem effectively? How can we do this whilst remaining calm under time pressure? What sort of problem-solving skills are needed?*

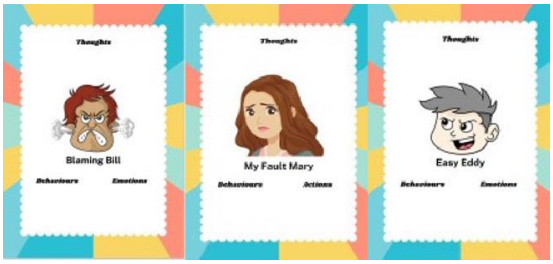
3rd station: (picture of a puzzle)

In this activity, group members are tested on their understanding of the different ways we can jump to conclusions.

Jumping to conclusions activity: Group members will be reminded of the jumping to conclusions characters introduced in previous sessions (My-Fault Mary, Blaming Bill and Easy Eddie).

Time | Content | Actions

Bridging And SCIT (45mins)



They are tasked to identify which character is which and describe each of their traits, or how they behave (for example self-blaming, blaming others or blaming luck or circumstances).

Discussion points: *In what situations would it be important to remember the different jumping to conclusions characters?*

4th station: (picture of a person leaping from a cliff)

Resource + memory cards

Memory activity: In this activity, group members must use their memory skills. Cards with matching pairs will be placed face down. Members (players) are tasked to compete with each other to identify all the matching pairs. The first player is instructed to turn over two cards. It's a match if the pictures are identical. Then the player puts the cards to one side and tries again for extra match. If they do not match the cards are turned over again and the next player takes a turn. The key is that the group members need to remember where they have seen

Discussion points: *What are some strategies that would help you remember information? What factors do you think would make it difficult to remember things?*

5th station: (picture of the brain)

Activity: Using the facts to build our assumptions. *We continue the theme of how to read people and their emotions, and how we respond by using our thinking skills and strategizing. This activity aims to piece this story together by looking at the pictures. Which picture goes first and then so on.* The group members are presented different screenshots from a scene in Thor: Ragnorok and are asked to put the screenshots in sequence order using clues from each shot (e.g., dialogue, facial expressions etc.). At the end of the activity ask: *How did you work out the sequence / pattern of the story?*

Discussion points: *In our everyday life we may not get the full picture and we have to work out how to use our thinking skills to understand what is happening. Things such as memories from past actions and behaviour, using active listening, problem-solving to check the facts etc. all help us to work out the full picture.*

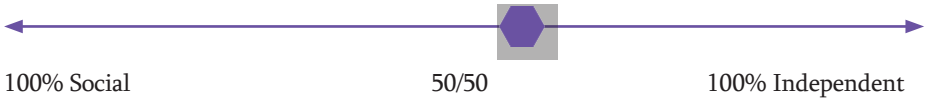
Time	Content	Actions
Wrap-up and check in (10mins)	Facilitator Resource + pieces of paper, cup	*Today we're consolidating what we have learned about our thinking and social skills. Let's reflect on what we have all achieved so far.* This involves: 1. Writing down each group member's name (including facilitators) on separate slips of paper 2. Put everyone's names into a container 3. Ask each group member to pick one piece of paper from the container Each 4. group member provides feedback, describing what this person did well this session. If a group member picks their own name must describe something they did well or a personality strength of theirs.

Notes

Session 15

Goals

- Build self -awareness when communicating with others, especially when feeling unpleasant feelings and a miscommunication
- Explore multi-tasking, planning, and organising skills out' and apply this to everyday situations
- Understand empathy: work together to assess the facts surrounding social events in different participants' lives more that cause them distress
- Appreciate that 'checking out' guesses with another person can decrease unpleasant feelings associated with social events
- Identify appropriate language to use in 'checking guesses in specific social situations
- Recognise that sometimes it is not possible to understand a situation without gathering information.

Time	Content	Actions
CRT (30mins)	iPad	*Today we're working on our multi-tasking, planning, and organising skills. Please start on the 'cooking city' game under the planning and organising folder on the iPad.*
	Facilitator	**Reflection activity:** Individually check in with each group member (10 minutes into the activity) and validate their use of skills to improve memory. The group facilitators will individually connect with each group member to discuss goals and thinking skills used in the iPad games. For example, *what is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?*
	Activity	**Learn to think and act activity:** **Group discussion:** *Ask the group: What is your learning style? Do you learn better through social interactions or independent study?* Explain to the group that there is a hypothetical line on the floor representing a continuum between these two different learning styles. Put a chair at each end and say which is '100% social' and which is '100% social' and '100% independent'. A mix of the two styles is represented along the line with an equal mix at the mid-point. Each group member will choose where to stand on the line and explain why they chose that position. Ask the group members to place themselves on the continuum and explain their position. **Learning style continuum**  100% Social 50/50 100% Independent

Time	Content	Actions

Bridging (15mins)

Discussion point: For group members who rated more effective learning through social interaction, highlight examples of when this happens. For example, studying in a group or at a café with a room full of people or learning on the job from other workers or in a team. This is at the opposite end of the spectrum to independent study, meaning reading up on a subject or searching the internet, learning on their own in a quiet room and trying to work problems out independently before asking others for guidance or help.

Ask the group: What happens if you're a social learner and your friend or partner is independent? What might happen in this situation?

Why is it important to understand how you organise information?

Answer: For example, validate that everyone learns differently. Organising the information, you gather can help you to be more efficient and remember things better.

Now we will look at how we deal with the information we get. Do you learn and organise information better through attention to detail or using trial and error?

Decide which end of the line is '100% attention to detail' and which end is '100% trial and error' and ask them to rate themselves again on the continuum again and explain their position.

Information continuum

100% Attention to detail 50/50 Mix of both 100% Trial & error

Discussion point: Ask the group members to give an example of how they organise information. For example, explain that when you buy something new you never read the instructions first, you'd rather just push buttons than read the manual.

Why is important for you to understand how you organise information? What happens if you learn and organise through trial and error and communicate with someone who thinks about all the details? What could go wrong?

We all think differently, and it's important to work out what works for you. Has there been a time when you've had a bad fit between how you think and act? (For example, you have a doctor's appointment scheduled early when you like to sleep in late, you like to make a shopping list, but your partner prefers wandering through the shop and buying what catches their eye).

What do you think will happen when there's a mismatch in your thinking and actions? Discuss how these factors can influence the ability to function in your everyday life, such as achieving goals. Also explore the difficulties in relationships, for example: *What will you need to do, if you and your partner think and act differently?*

Understanding how your ability to learn can help build knowledge and self- awareness. This method helps you to be systematic (i.e., critical thinking), mindful of judgements / bias and clearer with how you communicate with others. It will help get tasks completed without stress and reduce misunderstandings in your relationships.

Time	Content	Actions

SCIT (30mins)

Activity

Resource

Group discussion: The Birthday Party. *Your birthday is coming up soon, and you decide to host a party at your house this year. The first step on your agenda is to plan the invitation list. While you're excited for all your friends to celebrate with you, you realise quickly that choosing who to invite is a challenging task as you must consider whether the different personalities will mix, whether you can tell them to invite a friend, and if there have been any recent conflicts between any of your friends you need to take into account.*

Show them the following profiles of the potential invitees.

Resource

Whiteboard + butchers paper

Group Discussion: *Look at each profile and decide whether they will get an invite or not. Let's discuss why or why not you would invite them and look at how different factors in their profile might influence your decision. To do this, let's create a table to chart the advantages and disadvantages of each person:*

Person	Advantages	Disadvantages
Sam		
Jarrod		
Faye		
Matt		
Emma		
Alina		

After reviewing the party guest list ask the group: Is there any additional information you would want to know about each person before making your final decision?

When the group makes their final decision ask: How would you let someone know that they are not invited to the party if they find out it is on? How would you respectfully do this? **Answers:** For example, suggest calling or seeing the person to explain the reason, maybe because you could only invite a small number of guests, or arrange to meet up with them another time.

Discussion point: Validate the feelings of discomfort and anxiety that might come up and that things like this can damage a relationship. Remind the group that this situation presents a dilemma, discussed in a previous session, where you can be accountable for your actions or take the easier path of omitting the truth. Revisit the dilemma between these two positions and navigate how they would respond to such a difficult situation. There is no right answer, it will depend on the beliefs and biases of the group.

Discuss that the answer may not be clear and that they could consider problem-solving this dilemma with friends, a schoolteacher, or a counsellor.

Time	Content	Actions
Sharing and wrap-up (15mins)	Facilitator Resource Whiteboard	*Instead of doing the session catch-up at the end, we will share ways that have worked when managing an unpleasant feeling or miscommunication.* **Share your experience activity:** Ask someone to volunteer to tell the group about an event from their week that caused unpleasant feelings or a misunderstanding. • On the board, the group facilitator will draw a table with 4 columns titled: "Facts," "Guesses," "Feelings," and "Action" • Summarise the key facts of the situation in the "Facts" column List 3 or 4 guesses about what caused the problem, and underline the guess that the target person believed most • List the emotions that each guess may have led to for the target person, and underline the main emotions that the target person was feeling about the situation • Get feedback from the group about what they think is the best guess based on the facts • Brainstorm with the group to identify several actions they could take to make the bad/unpleasant feelings less • Weigh the pros and cons of different actions and decide which is best. **Note:** Group facilitators can present a backup case scenario if the group members do not generate one. For example, exploring the relationship between peers and when an unpleasant feeling may be experienced, such as stealing a car or gang related fights.

Notes

Session 16

Goals

- Identify non-verbal communication and how this provides information
- Apply a process to simplify/ sort through information
- Practice the interplay between feeling, thought, and actions
- Continue working on planning and organising skills, with application to everyday life.

Time	Content	Actions
CRT (30mins)	iPad Facilitator	Ask the group to choose between the following iPad games: Puzzle, Water Sort Puzzle, Plants versus Zombies. **Group reflection:** Ask the group to identify what planning and organising skills were used while playing the iPad games. Explore further: • *When do you use your planning and organization skills?* • *What strategies would you like to introduce to better organise and plan?* *Let's play the jigsaw puzzle together.* After this activity, ask the group what planning process or strategies were used to tackle the jigsaw puzzle. For example, fill in the border pieces first and then venture into the middle. **Discussion point:** Highlight the strategies which help with planning and organising, problem solving, and maintaining attention: 1. Break tasks down into smaller sections (known as 'chunking') Rank 2. tasks in order of importance 3. Consider the steps involved to complete tasks 4. Seek feedback from others to know you have understood the task correctly.
	Activity	**Challenge activity:** *Today we will talk about ways to stay organised in your daily life. Sometimes you need to weigh up options. You'll also be using your problem- solving skills.* *The activity today is working out what mobile phone you should buy. Take a minute and think about all the strategies you might need to use to buy the phone. For example, listening skills when talking to the salesperson, attention skills to read information online about customer reviews of the product etc.* Ask the group to think of questions they need to ask to get all the correct information. For example: • What does this plan include? Do you understand the pricing? What will you have to pay each month or over a year? • What is the customer feedback regarding the phone? How good is the connection (for example, rural areas may not get reception)?

Time	Content	Actions

Resource

Today we will be your sales assistants! Around the room we have set out different mobile phone plans that you can choose from. You all have a phone already, but the task is to work out whether it is a good idea to get a new phone or if it is better to keep your existing one.

We want you to role play this activity based on randomly selected information about your budget, where you live, etc. We have different details for you to select from in this bowl. This includes the cost of travel and food. First, you will need to determine your living expenses and how much money you have left over for social activities and buying a new phone.

Below are the scenarios the group members will select from at random.

Explain that scenarios include how much they pay for their current phone and that this money can go towards the new plan if they get a new one.

If you're deciding whether to get a new phone you will need to ask us what the plan includes, for example how much data and how many phone calls per month.

Note for facilitators: You are role-playing as the sales assistant, so you will need to read the information about the phone plans available around the room.

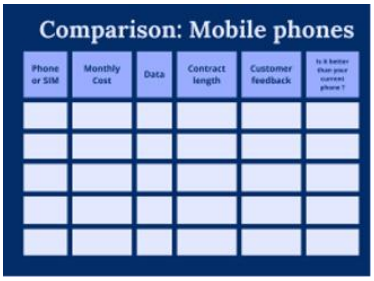
If the group members ask about customer feedback on the phone product or how good the phone connection is, then hand out information on customer reviews.

Device or SIM	Customer feedback
Samsung Galaxy A53 5G	Easy to use Great battery life
iPhone 13	Great camera Easy to use if you already have an iPhone
Felix - sim	Poor connection
Lloyd - sim	Good connection in city and rural areas
Samsung Galaxy S23 5G	Difficult to navigate Great camera
iPhone 11	Poor battery life (dies after 8hours) Easy to use

Before we begin, let's stop and have a think about what sort of things you need to work out.

- *What's important to you in a phone?* This will help guide the group member to determine their priorities. For example, they might rely on a family member or friend's wi-fi and only want to spend money on a phone for texts and phone calls.
- *How will you work out if the plan is good or bad?* If group members say, *'I want the cheapest option' ask them: What about customer feedback or your location/internet connection?*

Time	Content	Actions
Bridging (15-20mins)		Prompt the group to brainstorm what questions to ask and discuss the benefits of using a table to sort through the information. Discuss what headings are useful to have in the table. For example: *Would you like a piece of paper to record the information? What strategy would you like to use?* If they say they want to see a comparison table, use the template below to guide them and ask: *What headings would you use in a comparison table?* For example, name of the mobile, consumer feedback, data, cost?



Note for facilitators: Give them a sheet of paper or set out a blank table for them to write down the information they collect.

Ask them to go around the room and look at the different plans to find out which phone to buy. Instruct them to consider their other life expenses (based on the scenario they have been given) when deciding.

Group discussion: Find out from the group how they made their final decision. Highlight the different thoughts influencing them about which phone to purchase. For example, was it only based on wanting to look good or be cool (values- based) or was it a rational/logical decision (saving money).

Validate and reflect any observed thinking strategies, for example, problem solving (pros and cons), attention/concentration, organisational skills.

Award points are given for positive responses, how they assessed each product, how quickly they gathered and processed all the information, and for asking questions to gather or confirm information.

Group discussion: *Where else in your life would you need to use these sorts of skills to make a decision? That is, prioritising, planning, and organising skills?*

Group facilitator may provide an example of thinking what you need to do at the start of each day:

- *How do you decide what things you have to get done?*
- *What do you need to do first?*
- *What do you need to do before you can get these things done?*
- *Do you need to prepare or bring anything with you?*
- *Would anyone use a similar table to understand the pros and cons of another situation where they must decide?*

Revisit strategies that help us to stay organised. For example, making a list, keeping a 'to-do' book, having a planner or organiser on our phone.
Think ahead and have a place to put everything you need for the next day.

Facilitator

Challenge activity: This activity gathers evidence and checks to see if our guesses are correct. The activity is called 'Following the leader.' You will need to use your attention and non-verbal communication skills.

Time	Content	Actions
SCIT (10mins)		Explain to the group that one group member will be picked to play the 'guesser' and will briefly leave the room (no peeking or listening). While they are gone, the rest of the group will elect one person to be the leader with the rest of the group members following. You need to keep silent throughout the activity as you are looking for non-verbal clues. The leader will need to make movements that the followers can quickly mimic (e.g., pat their stomach, wave their arms, kick their legs, jump, etc.). The followers must continue to mimic the leader's movements without looking directly at them and making minimal eye contact. The guesser will then try to pinpoint who the leader is by watching everyone's movements. Repeat the roles of the guesser and leader as often as you can in the timeframe. Any leader who doesn't get caught within 3 minutes wins a point. **Note:** Consider asking other staff to participate to increase the numbers and the degree of difficulty. **Group discussion** after participating in group challenge: • *How did you know who was the leader? (e.g., skills used)* • *What evidence did you have?* • *What role was most challenging* (Guesser, Leader, or Followers)? • *How well did you work as a team? How could you have improved?* • *Why is it important to use non-verbal communication?* • *Who watches people's actions? Why and when would you do this?* Discuss when information is unclear, look to understand non-verbal communication. Observing a person's action can fill in the missing piece of the puzzle. Give an example, how non-verbal communication can assist understanding a person's action in relation to a cheating or bullied situation.
	Facilitator	*When dealing with our emotions and relationships, it's important to apply organising and planning strategies, such as writing things down at a table, to assist our thinking skills, especially when we feel distressed. This will help us learn how our feelings, thinking and actions interplay, and help us problem-solve ways to do things differently.*
	Handout	Ask for a volunteer to read the case study below from the 'Sorting information' worksheet: *"Isaac is 17 and lives with his parents and the family dog. He has been suspended from school several times for fighting, and he currently faces expulsion, a few months shy of graduation.* *Recently he was in trouble for throwing a book at his teacher's desk when she assigned him detention for failing to complete an assignment. Isaac is embarrassed and apologetic for his behaviour."*

Time	Content	Actions
SCIT (10mins)	Resource	**Group discussion:** Explore with the group members the different aspects of this scenario that could be considered under the headings of 'Thoughts,' 'Guesses,' 'Feelings' and 'Actions' as a way to understand and deal with the problem – that is his behaviour. If the group members cannot describe the categories (see below), guide them with questions. For example: • *Where is his behaviour coming from?* • *Why is he doing it?* • *What do you think is happening for him?* • *What else could be going on?*
	Whiteboard + butchers paper	Example of case study structure:

Facts	Guesses	Feelings	Action
Threw a book	He may be living with domestic violence at home?	Irritable	Aggressive towards authority / teachers
Suspended from school	Using drugs?	Remorseful	Didn't say why he didn't hand in assignment
Didn't hand in an assignment	Has someone left the family home or died?	Angry	
	Is he sleeping ok?	Sad?	

After discussion about what has happened, ask:

- *What could he have done differently?*
- *How could he learn from this experience?*

Wrap-up 5mins	Facilitator	*Today was a busy session and we wanted to bring all the elements together. When dealing with our feelings, actions and thoughts, it's important to talk to someone you trust or write things down systematically, such as in a table. This will help us learn how our feelings, thoughts, and actions interplay with each other and help us think about how and when we want to act next time.*

Notes

Session 17

Goals

- Prepare for writing a CV
- Practise assertive communication and interview skills
- Continue to work on planning and organising skills.

Time	Content	Actions
CRT (30mins)	iPad	Ask the group members to choose an iPad game from the planning or organising folder.
	Facilitator	**Reflection activity:** Individually check in with each group member (10 minutes into the activity) and validate their use of skills to improve planning and organisation. The group facilitators will individually connect with each group member to discuss goals and thinking skills used in the iPad games. *For example, what is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?* **Group discussion:** *How do we use planning and organising skills in our everyday lives? Are there other strategies you've seen other people use to be more organised that you could use? (e.g., listing all your tasks in a table and prioritising them, setting alarms as reminders, writing information down in the notes section of your phone or in your calendar etc.)*
	Facilitator	**Group discussion:** Updating your CV/resume activity *Tim is looking for a job as a personal trainer (PT). He has previously completed a Certificate 3 and Certificate 4 in Fitness. Tim has also previously worked in a gym and ran fitness classes. He now wants to privately train people, because he enjoys motivating others and finds it rewarding to see their progress. Tim believes he understands other people's emotions and can handle when people feel frustrated or disappointed. Tim's colleagues say he is great at explaining instructions and guiding people through exercises. Outside of PT, Tim's hobbies include swimming, surfing and painting. Tim's resume is below. What should Tim include on his resume? Is there anything that Tim should remove?*
	Handout	Read through the following CV and discuss what is included and what additional information could be included.

Time	Content	Actions
Bridging (20mins)		Provide a copy of Tim's complete resume. Also discuss other CV templates and examples. If there is time, check in if the group members would like to design their CV.
SCIT (25mins)	Activity Handout	**Job interview role play activity:** Assign the group members to role as either an employer or a job candidate based on the following scenarios. Before playing the roles, brainstorm the important qualities to display when being interviewed. For example: • Maintain eye contact, good posture, smiling • Paraphrase the question back in your answer • Demonstrate your qualities by giving examples Observe the role plays and give group members feedback.
Wrap-up and check in (10mins)	Facilitator	*Getting ready for job application and interviews involves effective planning and organisation. To excel in interview, practice is crucial. Practice answering common interview questions with someone you trust, honing your skills to build confidence. So, stay organised, keep practicing, and you'll excel in interviews just as you would in any other endeavour.* *Let's do our check-in. Today we're using strength cards (e.g., alternate option is designing adjective word cards) to help us give feedback to your fellow group members. Choose a card and explain why you have chosen this one and how is shows qualities of your group member.* Assign the group who they will provide feedback on and have the card laid out. Afterwards reflect how it made them feel to provide feedback and check-in if any of the group members done this outside group.

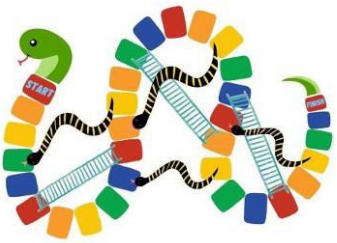
Notes

Session 18

Goals

- Build self -awareness of emotional states and behaviours
- Start work on developing a wellness plan
- Consolidate skills learnt throughout the program and relate them to everyday life
- Work on preparation skills (frontloading)

Time	Content	Actions
CRT (30mins)	iPad	Ask group members to choose an iPad game from the problem- solving, organising or planning folder.
	Facilitator	**Reflection activity:** Individually check in with each group member (10 minutes into the activity) and validate their use of skills. The facilitators will individually connect with each group member to discuss goals and thinking skills used in the iPad games. For example: *What is the goal of the activity? What are the different ways you can meet your goals? How do you think this activity will help you in your everyday life? How might this activity help you develop your skills in this area?*
	Facilitator	*Sometimes it can help if you prepare beforehand for what to expect in certain situations. This is called 'frontloading'. Last session we discussed preparing for a job interview and we're continuing from our last session we will work on a plan for when you may not be feeling so good. First, let's do a quick fact check about how we can recognise when we're feeling good and when we're not.*
	Handout	*Complete the worksheet 'What do I notice about the way I act?' by ticking any things that relate to you.*
	Activity	**Wellness plan activity:** For this activity you will be exploring what things can help in your everyday living to make you feel better. Prompt group members to reflect on their lives when they are in a 'state of wellness' (e.g., going outside, seeing friends, having lots of energy). Then prompt them to think about what helps them maintain this state and what might make them feel worse. Reflect on their lives when they are 'struggling but still managing' and when they 'need emergency support'. In these last two states, group members are prompted to reflect on what may help them return to wellness or what things would make them feel worse.

Time	Content	Actions
Bridging (15mins)	Handout	*Use the following worksheet to fill in your own wellness plan. Let's work through this together and write down our answer. It's also important to share this with people you feel supported by, such as a parent, teacher, or counsellor. Let's start with the first question:* **Note:** Group facilitators review plans and identify any group member who shared past risk to self and / or current. Ensure the group member has support (i.e., treating person/ team), such as counsellor, and share wellness plan with relevant treating services. Discuss consent to share information and how the group member would like to be involved in these conversations.
SCIT (30mins)	Activity Resource + markers	**Challenge activity:** *Today the challenge is a snakes and ladders board game. To make this interesting we've designed a board game with questions. You will need to roll your dice and move between the squares. When you land on a coloured square, you have to pick up the corresponding-coloured card and answer the question.* *There is a rule that you must land on the finish square with an exact roll of the dice. You must continue until you roll the exact number to land on the finish square. If you land on a square with a ladder, you move up the ladder; if you land on a square with a snake, you slide down. The player who gets to the finish square first wins the challenge and is awarded a point.* **Note:** A rolling dice can be downloaded on the iPad and recommend using two dice. 
Check-in and wrap-up (10mins)	Facilitator Resource + small paper, cup	*Today has been about preparing and planning for your future and implementing some strategies to keep you well. Let's finish on a 'another feedback activity:* 1. Write down each group member's name (including facilitators) on separate pieces of paper. 2. Place everyone's name into a small bag. 3. Ask each group member to pick one piece of paper. 4. Each group member is asked to give feedback to the group describing what this person did well or describe a good quality of their personality. If you picked your own name, then describe something you did well or one of your strengths.

Notes

Session 19

Goals

- Review how planning is crucial for everyday functioning
- Validate thinking skills used by group members
- Building positive experiences into routines
- Being 'in the moment.'

Time	Content	Actions
CRT (35mins)	iPad	Review thinking skills and ask group members to play an iPad game of their choosing. Ask them to briefly explain why they've chosen this activity. Explore if any members want to have a battle in one of the iPad games (such as 100Balls, Jigsaw Puzzle, etc.)
Bridging (15mins)	Activity	**Challenge activity:** *Today we're playing 'Thinking heads'.* *You have each been assigned a 'thinking strategy' that you will have to demonstrate in your answers. You may ask the other members one 'Yes' or 'No' question at a time. You can continue asking questions until you correctly identify the thinking strategy. The first participant to correctly identify the strategy wins a point. Continue until everyone's thinking strategy has been correctly guessed.* Each group member will be given a thinking strategy: attention, memory, problem solving, planning, and organising. The group members will have to guess the strategy that the others have been assigned by asking them closed 'yes' or 'no' questions.
	Facilitator	*Today's theme is about building positive experiences into our daily routine. By doing this you're pre-empting when you might experience an unpleasant event or have a crisis, and you can engage in a positive experience that is already planned into your day. This can help you get back on track!* Ask the group members if they can remember a time when they were having fun, but then stopped paying attention to the moment because they were thinking about when it would end, or whether they deserved it, or whether something else was expected of them.
	Activity Resource + spot it	**Building positive experiences activity:** *Let's practise being in the moment and enjoying our actions. Today we will practise some activities and work out what part of the activities provide a positive experience and why. Let's go through some of these:* • use the 'Spot It' card game (i.e., this can be exciting or annoying) • progressive muscle relaxation (i.e., this can be relaxing or boring) • watch a funny YouTube clip (i.e., this can be funny or lame) • throw a ping pong into a cup challenge (i.e., exciting or silly) After each activity, ask: How hard was it to be in the moment and completely focused on the activity? *Did you find your mind wandering? What part of the activities provided a positive experience and why?*

Time	Content	Actions
CRT (35mins)		**Group discussion:** Ask the group members to nominate 5 pleasant activities that they think they would like to have built into in their regular week. Explain that they have no restrictions and can wish for anything, for example, travel. • Discuss what happens if your friends don't value the same interests you have. *What if your interests are different from your friends?* After group members have shared their responses, explain that it is equally important to be spontaneous as planning ahead of time. *Being flexible and able to adjust your plans allows you to be 'in the moment' and enjoy the experience around you.*
Wrap up and check-in (10mins)	Facilitator Winner	*We have been working on building positive experiences into our everyday life to help us bounce back from life stressors. Today we are asking for group feedback with a twist. Each group member will pull someone's name someone's name from a cup. Please keep this secret. The twist is the group must guess who you're talking about. Remember to use some facts we may all know and use strength cards to discuss this group member.* Also, announce and celebrate the winner of the overall challenges and discuss what graduation food will be brought in for the last session. Note: Acknowledge that it is sad to end the program and congratulate everyone for participating and coming to each session.

Notes

Session 20

Goals

- Graduation and celebration of achievements
- Gain feedback from group members
- Have fun and acknowledge it is the last session (potential sense of loss)

Time	Content	Actions
Lunch (30mins)	Facilitator	Welcome the group members to their graduation and the celebration of completing 20 sessions. Say: *As part of the celebrations, we're having lunch to discuss your achievements and your feedback on the program.* Ask the group members to complete the one page 'Participant Feedback Questionnaire' before eating their lunch. Once the questionnaire has been completed, have a group discussion regarding the acceptability of the program by asking: • *What did you find helpful from participating in the group?* • *What wasn't helpful?* • *What were your top 3 favourite activities?* • *Which activities, if any, were unhelpful?* • *Which were your least favourite?* • *How confident do you feel now to use the skills and strategies you've learnt daily?* • *Was there anything else that you would have liked to cover or be added to the program?* **Note:** Group facilitators determine when to have lunch. Sometimes this is done during the group discussion.
	Handout	*This will be our final challenge activity, so we will play 4 games in a row, each lasting for just one minute. Points will be given to the winner of each game.* Group facilitator records these final points on a table as follows. These points are then added to the overall points already accumulated from previous sessions to give an overall winner, announced at the end of this session. **Minute to Win It**

Group members	YP1	YP2	YP3	YP4
Game 1				
Game 2				
Game 3				
Game 4				
TOTAL				

Time	Content	Actions
Lunch (30mins)	Resource + jenga towers, bubbles iPad	**Game 1 – Jenga Tower** Each group member has a minute to pull out as many blocks as they can without the tower falling. They can only use one hand. **Game 2 – Scrambled letters** Each group member is given a worksheet with jumbled letters. They must make as many words as they can in one minute. N R L A G I S E T **Game 3 – Blowing bubbles** Ask the group members to blow the biggest bubble. The first person to blow the biggest bubble in the minute wins. **Game 4 – 100 Balls** Each group member has an iPad. Ask them to play '100 balls' for a minute - the person with the highest score wins.
Graduation (15mins)	Facilitator Certificates	**'Shout-out' activity involves:** 1. Inviting staff to attend the graduation/certificate ceremony to share their observations of the group member's experience/journey throughout the group program. 2. Providing graduation certificates for each group member and a card outlining your observations of their strengths throughout the program. 3. Congratulating who won the most points overall in the challenges throughout the program! CERTIFICATE OF COMPLETION

Notes

References

Bush, J. (2016). To help a criminal go straight, help him change how he thinks. National Public Radio.

Carter, C. S., Barch, D. M., Gur, R., Gur, R., Pinkham, A., & Ochsner, K. (2009). CNTRICS final task selection: social cognitive and affective neuroscience–based measures. Schizophrenia bulletin, 35(1), 153-162.

Combs, D. R., Adams, S. D., Penn, D. L., Roberts, D., Tiegreen, J., & Stem, P. (2007). Social Cognition and Interaction Training (SCIT) for inpatients with schizophrenia spectrum disorders: preliminary findings. Schizophrenia Research, 91(1-3), 112-116.

Corcoran, R., Mercer, G., & Frith, C. D. (1995). Schizophrenia, symptomatology and social inference: investigating "theory of mind" in people with schizophrenia. Schizophrenia Research, 17(1), 5-13.

Couture, S. M., Penn, D. L., & Roberts, D. L. (2006). The functional significance of social cognition in schizophrenia: a review. Schizophrenia bulletin, 32(suppl_1), S44-S63.

Fett, A.-K. J., Maat, A., & Investigators, G. (2013). Social cognitive impairments and psychotic symptoms: what is the nature of their association? Schizophrenia bulletin, 39(1), 77-85.

Galletly, C., Castle, D., Dark, F., Humberstone, V., Jablensky, A., Killackey, E., Kulkarni, J., McGorry, P., Nielssen, O., & Tran, N. (2016). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the management of schizophrenia and related disorders. Australian & New Zealand Journal of Psychiatry, 50(5), 410-472.

Gioia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (2015). Brief 2: Behavior rating inventory of executive function.

Harris, A. W., Kightley, M., Williams, J., Ma, C., & Dodds, C. (2022). Does Adding Social Cognitive Remediation Therapy to Neurocognitive Remediation Therapy Improve Outcomes in Young People With a Severe Mental Illness?—The Advantage Trial. Frontiers in Psychiatry, 12, 789628.

Justice Health Forensic Mental Health Network, & Juvenile Justice NSW. (2017). 2015 Young people in custody health survey: Full report. In: NSW Government Sydney.

Kurtz, M. M. (2005). Neurocognitive impairment across the lifespan in schizophrenia: an update. Schizophrenia Research, 74(1), 15-26.

Medalia, A., Herlands, T., Saperstein, A., & Revheim, N. (2017). Cognitive remediation for psychological disorders: therapist guide. Oxford University Press.

Mesholam-Gately, R. I., Giuliano, A. J., Goff, K. P., Faraone, S. V., & Seidman, L. J. (2009). Neurocognition in First- Episode Schizophrenia: A Meta-Analytic Review. Neuropsychology, 23(3), 315-336. https://doi.org/10.1037/a0014708

Meyers, J. E., & Meyers, K. R. (1995). Rey complex figure test under four different administration procedures. The Clinical Neuropsychologist, 9(1), 63-67.

Patrick, D. L., Burns, T., Morosini, P., Rothman, M., Gagnon, D. D., Wild, D., & Adriaenssen, I. (2009). Reliability, validity and ability to detect change of the clinician-rated Personal and Social Performance scale in patients with acute symptoms of schizophrenia. Current Medical Research and Opinion, 25(2), 325-338.

Peña, J., Ibarretxe-Bilbao, N., Sanchez, P., Uriarte, J. J., Elizagárate, E., Gutiérrez-Fraile, M., & Natalia, O. (2018).

Mechanisms of functional improvement through cognitive rehabilitation in schizophrenia. Journal of Psychiatric Research, 101. https://doi.org/10.1016/j.jpsychires.2018.03.002

Poppe, A., Bais, L., van Duin, D., Ćurčić-Blake, B., Pijnenborg, G. H. M., & van der Meer, L. (2021). Improving cognition in severe mental illness by combining cognitive remediation and transcranial direct current stimulation: study protocol for a pragmatic randomized controlled pilot trial (HEADDSET). Trials, 22(1), 275. https://doi.org/10.1186/s13063-021-05230-8

Roberts, D. L., Penn, D. L., Labate, D., Margolis, S. A., & Sterne, A. (2010). Transportability and feasibility of social cognition and interaction training (SCIT) in community settings. Behavioural and cognitive psychotherapy, 38(1), 35-47.

Roth, R. M., Gioia, G. A., & Isquith, P. K. (2005). BRIEF-A: Behavior rating inventory of executive function--adult version. Psychological Assessment Resources.

van Duin, D., de Winter, L., Oud, M., Kroon, H., Veling, W., & van Weeghel, J. . (2019). The effect of rehabilitation combined with cognitive remediation on functioning in persons with severe mental illness: systematic review and meta- analysis. Psychological medicine. Psychological medicine, 49(9), 1414–1425. https://doi.org/https://doi.org/10.1017/ S003329171800418X

Appendix 2: Feedback Questionnaire

Participant Feedback Questionnaire

Filling out this questionnaire will help us improve our treatment program. Your opinion is valued and will remain confidential. We appreciate your feedback.

Please ✓ your answer.

1. **Did the treatment sessions help you with your mental wellbeing?**
   ☐ Don't know ☐ Not at all ☐ Ok ☐ Helpful ☐ Very Helpful

2. **What activities did you enjoy the most?**
   a. Getting better at playing the games ☐ No ☐ Yes and why?_____
   b. Learning from others in the group ☐ No ☐ Yes and why?_____
   c. Understanding your emotions ☐ No ☐ Yes and why?_____
   d. Other and why? _____

3. **How many treatment sessions did you regularly attend per week?**
   ☐ 2 ☐ 3 ☐ 4 ☐ 5

4. **Do you think there were enough treatment sessions?**
   ☐ Too many ☐ Just right amount ☐ Not enough ☐ Don't know

5. **Was one and a half hours long enough for each treatment session?**
   ☐ Too long ☐ Just right ☐ Too short ☐ Don't know

6. **Did you like the way the activities were run by the group leader?**
   ☐ Not much ☐ A little ☐ OK ☐ Good ☐ Very good

7. **Did you feel comfortable and supported in the learning space?**
   ☐ Mostly not ☐ Sometimes not ☐ OK ☐ Mostly ☐ Always

8. **Overall, how would you rate the treatment sessions?**
   ☐ Not good ☐ Not too bad ☐ OK ☐ Good ☐ Very good

9. **Did you think you learned any skills that you will use in your everyday life?**
   ☐ Not sure ☐ No ☐ Maybe ☐ Some skills ☐ Quite a few skills

10. **Do you think what you learned will help you make positive changes in the following areas?**
    a. School ☐ No ☐ Yes and how?_____
    b. Friendships ☐ No ☐ Yes and how?_____
    c. Leisure time ☐ No ☐ Yes and how?_____

11. **Did the group leader explain the tasks in a way that was easy to understand?**
    ☐ Very poor ☐ Poor ☐ Ok ☐ Good ☐ Very Good

12. How would you rate the support you were given by the group leaders during the treatment sessions?

☐ Very poor ☐ Poor ☐ Ok ☐ Good ☐ Very Good

Support Person Feedback Questionnaire

Filling out this questionnaire will help us improve our treatment program. Your opinion is valued and will remain confidential. We appreciate your feedback.

Please ✓ your answer.

1. Did you observe any positive impacts on the young person (YP)'s mental wellbeing from attending the treatment sessions?

☐ Don't know ☐ None ☐ Minimal impact ☐ Moderate impact ☐ Quite a big impact

2. **Were there certain activities you observed the YP you supported enjoyed in particular?**

a. Getting better at playing the games ☐ No ☐ Yes and why?_____

b. Learning from others in the group ☐ No ☐ Yes and why?_____

c. Understanding their emotions ☐ No ☐ Yes and why?_____

d. Other and why? _____

3. How many treatment sessions did the YP regularly attend per week?

☐ 2 ☐ 3 ☐ 4 ☐ 5

4. What did you think about the number of sessions the YP attended per week?

☐ Too many ☐ Just right amount ☐ Not enough ☐ Don't know

5. Was one and a half hours long enough for each treatment session?

☐ Too many ☐ Just right amount ☐ Not enough ☐ Don't know

6. When you chatted to the YP, did they say they liked the group activities?

☐ Not much ☐ A little ☐ OK ☐ Good ☐ Very good

7. Do you think the YP felt comfortable and supported in the learning space?

☐ Not much ☐ A little ☐ OK ☐ Somewhat ☐ A lot

8. Overall, how do you think the YP you supported coped with and enjoyed the treatment session?

☐ Not well ☐ A little ☐ OK ☐ Well ☐ Very well

9. Do you think the YP learned any skills during the treatment sessions that might be useful in their everyday life?

☐ Not sure ☐ No ☐ A little ☐ Some skills ☐ Many skills

10. Do you think the treatment sessions have already, or will have in the future, an impact on the YP's ability to make positive changes in the following areas?

a. School ☐ No ☐ Yes and how?_____

b. Friendships ☐ No ☐ Yes and how?_____

c. Leisure time ☐ No ☐ Yes and how?_____

11. **Did you observe any difficulties with the YP you supported understanding how the tasks were explained by the group leaders?**
    ☐ A lot of difficulty ☐ Some difficulties ☐ A little difficulties ☐ None

12. **How would you rate the level of support you observed between the group leaders and the YP you supported?**

    ☐ Very poor ☐ Poor ☐ Ok ☐ Good ☐ Very Good

Appendix 3: Treatment Session Checklist

Treatment Session Checklist - School-Link Advantage Research Study

Health
Justice Health and
Forensic Mental Health Network

Date:_____ Session No: _____ Research Clinicians: _____ Signature:_____

Participant's ID	**Attendance** -Yes/No If no, state reason (deterioration, challenging behaviour, seclusion, refusal, staff unable to escort, other)	**Medication change:** Yes/No	**School attendance**: No of days attending school (out of 5)	**Support required on unit**: 1-No support, 2-A little, 3-Some, 4-A lot, 5-Always	**Attainment of rewards**: Yes /No	**Goals achieved**: Yes / No / Ongoing List achievements

Treatment implementation:

Did it follow the steps in the Manual? What cultural changes were made?

-
-

How well was the intervention delivered?

-
-

Observations:
(e.g., concentration on task, group discussions, therapeutic space, timeout required)

-
-
-
-

Reflections:
(i.e., any disruptions, group dynamics and interactions, participant's engagement)

-
-
-
-

Appendix 4: School-Link Advantage Focus Group Template Questions for Final Session

What did you find helpful?
•
What wasn't helpful?
•
What were your top 3 favourite activities?
•
Which activities didn't you like?
•
How confident do you feel in using these skills and strategies in your everyday life?
•
Was there anything else that you would have liked to cover / add to the program?
•