Understanding Trauma Symptoms Experienced by Young Men Under Youth Justice Supervision in South Australia

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Table of Contents

List of Figures

List of Tables

Abstract

Experiencing childhood adversity or maltreatment has been widely recognised as a leading public health concern due to its high global prevalence and the consequential psychological and behavioural effects on victims. Trauma symptoms that develop in response to adversity or maltreatment are known to correlate with high-risk behaviours that can increase the risk of contact with the Youth Justice (YJ) system. However, it is unclear whether there are patterns of trauma symptoms which are more or less likely to lead to high-risk behaviour and YJ contact. Using a subsample of secondary, de-identified data of 155 young men under YJ supervision in South Australia enabled insight into the prevalence of trauma symptoms, and how these may be associated with Adverse Childhood Experiences, substance use, behavioural difficulties, and recidivism. These domains were assessed using a series of self-report assessments, combined with administrative Child Protection and YJ records. Trauma symptoms were reported in 90.1% of young men. Using Latent Class Analysis, four subgroups of young men were identified based on their clustering of trauma symptomatology: internalising, externalising, high, and low trauma symptom groups. While these four groups were identified based on specific patterns of trauma symptoms, the groups were not well differentiated by other characteristics. For example, over four-fifths of young men scored in the clinical ranges for substance use and externalising behaviour problems, while recidivism was reported in over three-quarters across all groups. These findings show that experiences of trauma symptoms are not uniform across the YJ populations, but that holistic approaches to treatment and prevention still appear to be warranted. This research can contribute to the development of effective and integrated service responses to assist agencies responsible for YJ population care.

Declaration

This thesis contains no material which has been accepted for the award of any other degree of diploma in any University, and, to the best of my knowledge, this thesis contains no material previously published except where due reference is made. I give permission for the digital version of this thesis to be made available on the web, via the University of Adelaide's digital thesis repository, the Library Search and through web search engines, unless permission has been granted by the School to restrict access for a period of time.

Contribution Statement

Prior to the commencement of this thesis, data had already been collected, entered into Stata, and cleaned by my supervisor for another research project. I worked with my supervisor to generate several specific research questions of interest and to configure the dataset and create new variables to answer these questions. I conducted the literature search, collected evidence, and completed the ethics application. My supervisor helped me with the conceptual understanding and interpretation of Latent Class Analysis output and provided me with an R notebook equivalent file for Stata. I then conducted all analyses independently with the guidance of my supervisor, and I wrote up all aspects of this thesis.

Overview

Childhood adversity and maltreatment are a leading public health concern worldwide (De Bellis & Zisk, 2014; Racine et al., 2020). A systematic review looking at the global prevalence of violence against children estimated that approximately one billion children aged two to 17 years had experienced some form of adversity or maltreatment during 2014 (Hillis et al., 2016). Experiencing multiple types of adversity is also common both in childhood and adolescence (Finkelhor et al., 2007a; Racine et al., 2020). It is well-established that such experiences lead to trauma-related distress symptoms that are associated with emotional and behavioural problems during youth (e.g., depression, post-traumatic stress disorder [PTSD], delinquency, school and social difficulties, substance dependency; Darnell et al., 2019; Racine et al., 2020). The effects of these experiences and their sequelae can crossover into adulthood and contribute to negative physical and mental health outcomes (e.g., disease, health risk behaviour, and premature death; Felitti et al., 1998).

A strong association has been identified between adversity, in particular experiences of child maltreatment and offending behaviour in adolescence (see Braga et al., 2017; Malvaso et al., 2021; Papalia et al., 2017 for reviews on this topic). Although evidence from systematic reviews demonstrates that only a small proportion of children who experience maltreatment or potentially traumatic events go on to engage in offending behaviour, it is well-established that many adolescents who have contact with the justice system have experienced maltreatment or adversity throughout their childhoods. Such experiences also elevate the risk for encountering Youth Justice (YJ) at an early age; with earlier contact itself found to increase the risk of continued YJ contact and subsequent adult criminal justice system involvement by 79% (Baidawi & Sheehan, 2019; Lynch et al., 2003). Thus, it is important to consider these experiences of maltreatment and adversity and manage the trauma-related and developmental needs of adolescents who enter the YJ system.

Childhood Adversity and Trauma

Research into childhood adversity shows that various forms of abuse (whether physical, sexual, emotional abuse or neglect) can lead to serious negative emotional and behavioural problems; and disrupt development in areas such as: executive functioning (decision-making and self-regulation; Levenson & Willis, 2019). Children with these experiences are at greater risk of reporting trauma symptomatology, including increased anxiety, depression, post-traumatic stress (PTS) and anger (Darnell et al., 2019; Kretschmar et al., 2018). In support of this view, several large national studies, such as the National Survey of Children Exposed to Violence (Finkelhor et al., 2015) and Adverse Childhood Experiences (ACEs) study (Felitti et al., 1998), have shown how exposure to childhood adversity has long-term implications on behavioural, physical, and mental health outcomes, which can progress into adulthood (e.g., anxiety, depression, health risk behaviour, disease, inappropriate sexual behaviour, and premature death).

Within this literature, the term ‘trauma’ is used interchangeably with ‘adversity’, so it is important to draw a distinction between exposure to potentially traumatic or adverse events and the experience of trauma symptoms. Exposure to potentially traumatic or adverse events refers to the event(s) itself, whereas the development of trauma symptoms is a response to these events (i.e., reaction to the event(s); such as depression, anxiety, PTSD, anger, dissociation, intrusive thoughts, and guilt; Briere, 1996; Racine et al., 2020).

Defining Trauma

Trauma has been defined in numerous ways by different researchers (Bloom, 2013; Briere, 1996; De Bellis & Zisk, 2014; Levenson & Willis, 2019). The American Psychiatric Association ([APA]; 2013) defines trauma as an experienced or witnessed event that threatens an individual's or other persons physical or psychological wellbeing, and which engenders a sense of fear, vulnerability, helplessness, or shock. Whilst this definition is

helpful (in certain contexts), it has been criticised for not reflecting non-life-threatening events that may be 'traumatic' and highly upsetting (Briere & Scott, 2006). It is now widely recognised that traumatic experiences can stem from more than a single event (i.e., natural disasters; motor vehicle/work accidents; or violence/conflict resulting from war or terrorism). Instead, trauma can also result from: prolonged exposure to child maltreatment; chronic illness; witnessing spousal violence; the death of a loved one; or, more common experiences such as parental divorce. Additionally, intergenerational repercussions of historical trauma – including systemic oppression, poverty, and discrimination (i.e., amongst Indigenous peoples, ethnic minorities, and other marginalised groups) – are also relevant but have generally been disregarded in definitions of trauma (Levenson & Willis, 2019).

An individual's immediate and long-term response to adversity can be influenced by a variety of biopsychosocial and cultural factors. For some, the aftermath may be met with resilience; while others may develop acute or more chronic symptoms that fall under the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5). However, not all will meet the criteria for DSM-5 mental diagnoses, despite having severe trauma-related symptoms or other culturally expressed signs (e.g., somatisation, where psychological stress is expressed through physical concerns). Therefore, even if an individual does not fulfil diagnostic criteria for trauma-related disorders, it is critical to acknowledge that trauma symptoms can substantially affect an individual's life (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014).

Long-Term Impact(s) of Trauma

Childhood adversity can nurture long-term outcomes that may involve risky or inappropriate activities. While Alcohol and substance abuse are commonly viewed as engaging in risk-taking behaviour in justice-involved adolescents, it could also be conceptualised as a behavioural response to dealing with previous (or current/ongoing)

experiences of adversity that develop into maladaptive coping mechanisms. This can be seen in Malvaso and colleagues (2022) study, where 43% of adolescents reported using alcohol or drugs because they felt stressed or had concerns. Internalising and externalising behaviour problems may also develop in response to adversity. Research using data collected by the National Child Traumatic Stress Network found childhood adversity to be associated with both internalising (mood/emotion based, i.e., anxiousness/depression) and externalising (i.e., aggressive behaviour or delinquency) behaviour problems. For example, Greeson and colleagues (2014) found that each additional type of exposure to a potentially traumatic event was associated with increased odds ranging from 1.11-1.16 of developing externalising problems, and 1.07-1.15 of developing internalising problems. Furthermore, Layne and colleagues (2014) study of 3,785 adolescents exposed to potentially traumatic events revealed that every additional type of potentially traumatic event exposure was associated with an increased likelihood between 6% and 18% of carrying out high-risk behaviours, such as substance and alcohol abuse, self-injurious behaviour, engaging in criminal activities, and running away from home.

Measuring Trauma Symptoms

Many tools have been developed to measure and assess trauma symptoms in children and adolescents, such as the Child Post-Traumatic Symptom Scale (Foa, 2001), and Childhood Trauma Questionnaire (Bernstein & Fink, 1998). However, most of these assessment tools focus on the development of PTSD symptoms following experiences of adversity or maltreatment; and are not comprehensive enough to identify other trauma-related symptoms that may develop. However, the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is a widely used assessment tool that addresses this gap.

The TSCC (Briere, 1996) is an assessment tool that was developed to better understand and evaluate trauma symptomatology and the range of psychological impacts

experienced by adolescents who have suffered an accumulation of potentially traumatic events during their childhood. At the time, there were seemingly few multi-scale tests of childhood trauma symptomatology that were available to clinicians and researchers, despite the literature pointing at the negative psychological effects these potentially traumatic events can have on children and adolescents (Briere, 1996). The TSCC assesses 6 domains: Anxiety, Depression, Anger, PTS, Dissociation, and Sexual Concerns. Examples of symptoms that suggest clinical intervention is required within these domains are presented in Table 1.

Table 1

Trauma Symptom Checklist for Children Subscale Symptom Examples

TSCC Subscale	Example of Symptoms
Anxiety	Hyperarousal, fear of victimisation, free-floating fears or impeding danger, projecting unrealistic fears of events that have not occurred
Depression	Grief, dysthymia (chronic depression), self-exclusion from activities, avoidance of social interactions, perceives themselves as unworthy, self-hatred
Anger	Highly irritable, hostile, or aggressive, difficulty de-escalating anger, resentment, throwing tantrums, talking back
PTS	Post-traumatic rumination (intrusive thoughts, blaming oneself, imagining alternate outcomes), anxious distractibility, irritability, re-experiencing painful memories
Dissociation	Reduced responsiveness to external environments, emotional detachment, cognitively avoids negative affect, involves one-self in fantasy to the exclusion of the real world and its demands to reduce/hide painful experiences (individual may not perceive this as problematic)
Sexual Concern	Sexual thoughts or feelings that are atypical for their age range, including sexual conflict, negative responses to sexual stimuli, and fears of sexual exploitation

Note. TSCC = Trauma Symptom Checklist for Children; PTS = post-traumatic stress.

Complex Post-Traumatic Stress Disorder (cPTSD)

To meet the DSM-5's diagnostic criteria for PTSD, one must have been exposed to one or more potentially life-threatening events that lead to: 1) re-experiencing painful memories, 2) effortfully avoiding trauma cues, 3) experiencing emotional numbing, and 4) hyperarousal (Bottalico & Bruni, 2012). However, concerns were raised that this diagnosis did not account for the psychological distress exhibited in individuals who have experienced prolonged adversity. In response, Herman (1992) introduced the term complex PTSD (cPTSD), otherwise referred to as *complex trauma*. This term is used to describe exposure to potentially traumatic stressors at an age (such as childhood), or otherwise in a context (i.e., from prolonged suffering), that affects their emotional self-regulation (Ford et al., 2012). cPTSD is multifaceted (i.e., results from numerous stressors), such as physical, sexual, or emotional abuse; neglect; 'chronic childhood victimisation' (such as household and neighbourhood violence); and bullying (Finkelhor et al., 2009). It also tends to be cumulative (i.e., involves repeated victimisation), which is a factor known to increase severe emotional and behavioural difficulties (Ford et al., 2012).

Although the DSM-5 does not recognise cPTSD as a viable medical condition, it has been recognised by the World Health Organisation (2018), in the *International Statistical Classification of Diseases and Related Health Problems* as of 2018. In fact, many psychologists, psychiatrists, and other workers with frontline mental health experience favour the use of cPTSD as a proximal diagnosis. Such practitioners recognise the significance of addressing the personal impact of ongoing interpersonal adversity, which has led to a more expansive "understanding of trauma than the clinical model" suggests (McLachlan, 2022, p.2).

Adverse Childhood Experiences (ACE)

ACEs is a term coined by Felitti and colleagues (1998) to describe a specific set of potentially traumatic childhood experiences that can have a profound negative impact on an individual's wellbeing across their lifespan. The ACEs framework measures 10 distinct life events that occur before age 18, including: physical, sexual, and emotional abuse; physical and emotional neglect; witnessing domestic violence; parental separation/divorce; household substance abuse; household mental illness; and incarceration of a family member (Felitti et al., 1998; SAMHSA, 2014). ACEs are considered to contribute to a 'cascade of psychosocial impacts', such as increasing the likelihood of developing health and behavioral disorders, addictions, maladaptive coping mechanisms, personality disorders, and engaging in risky behaviors (Felitti et al., 1998; Levenson & Willis, 2019; SAMHSA, 2014). In fact, Felitti and colleagues (1998) hypothesised that those who experience a multitude of ACEs will suffer the poorest health, wellbeing, and behavioural outcomes because of the cumulative impact of different adverse events. Since then, several empirical studies have researched this association between number of ACEs experienced and a variety of outcomes later in life and found general support for this hypothesis. For example, high ACE scores (generally defined as an endorsement of four or more ACEs) resulted in an increased likelihood of poor health outcomes and chronic disease (Anda et al., 2010; Dube et al., 2006); mental health problems (Anda et al., 2006; Chapman et al., 2004); smoking and substance abuse (Dube et al., 2006; Ford et al., 2011); and criminal and violent behavior (Baglivio et al., 2014).

Trauma Symptomatology and ACEs Among Justice-Involved Adolescents

Associations Between Trauma Symptoms, Exposure to ACEs, and Other Risk Factors for Offending Behaviour

It is clear that trauma symptoms and ACEs can negatively affect a person's wellbeing; this is irrespective of whether these experiences appear simultaneously, are time-limited, or

are reoccurring. All contribute to both physical and mental health vulnerabilities. It is possible then that these vulnerabilities have their roots in potentially traumatic experiences which, if left unresolved, may increase the likelihood of repeated maltreatment. Examining the associations between trauma symptoms, ACEs, and other risk factors for offending behaviour in justice-involved adolescent samples can help to understand some of the key factors that may be associated with offending pathways.

For example, several studies have shown how ACEs and exposure to potentially traumatic events often coincide with difficulties with emotional regulation and processing (including numbing and dissociation; Modrowski & Kerig, 2017), depression, anger, somatic complaints (Kerig et al., 2009), and the development of a term known as 'callous-unemotional' (CU) traits (i.e., lacks empathy and responsiveness to punishment, impaired emotional processing; Mozley et al., 2018). These studies have suggested that difficulties typically stem from early and cumulative experiences of adversity; and are a predictor of adolescent arrests (Bennett & Kerig, 2014; Mozley et al., 2018). In theory, CU traits (often viewed as an early indicator of psychopathy), are biologically-based and difficult to modify. However, Mozley et al. (2018) demonstrated that these traits may emerge as a reaction to maltreatment, by emotionally detaching oneself to help "cope with the distress associated with the trauma exposure" (p. 745). This is important because failing to recognise that those suffering from such symptoms may be a result of exposure(s) to potentially traumatic events could mean symptoms progressively exacerbate if left untreated, and may increase the risk of further poor outcomes, including escalating psychological complications, substance abuse, disengagement with schools and help services, and recidivism (Kerig et al., 2009; Malvaso et al., 2022). A better understanding of *why* adolescents present with such symptoms can help justice systems identify new and more appropriate responses to the needs of adolescents under their care.

ACEs and Offending Behaviour in Youth Justice Populations

Recent years have seen an increase in studies investigating ACEs and their related health and social outcomes, which have provided consistent evidence highlighting that YJ populations (adolescents known to offend) tend to have experienced the highest number of ACEs and are also the most likely to engage in serious, violent, and chronic offending (Baglivio et al., 2014; Malvaso et al., 2021; 2022). For example, Fox et al. (2015) demonstrated that, even after controlling for other known predictors of crime, the likelihood of offending in adulthood increased by 35% for each additional ACE experienced. Additionally, Malvaso and colleagues (2021) systematic review looking at the prevalence of ACEs among just-involved adolescents across 124 published studies discovered that an overwhelming majority (87%) had suffered at least one potentially traumatic event. Furthermore, the likelihood of suffering at least one ACE were nearly 12-times higher for adolescents who had contact with the justice system than for those who had not.

Although not all mistreated adolescents engage in criminal offending (Malvaso et al., 2017; 2021), there are biological, social, and psychological factors that significantly increase their risk (Levenson & Willis, 2019). These factors are said to consist of a complex interplay of individual (e.g., childhood social and emotional problems, substance use), social (e.g., antisocial peers), and contextual risks (e.g., poverty and high neighborhood crime rates); and additionally protective factors (e.g., school attendance, intelligence level), which are thought to influence the pathways from maltreatment to offending behavior (Malvaso et al., 2021). However, Finkelhor (2018) emphasises that not all individual's with high ACE scores will necessarily be traumatised, and similarly, not all individuals with trauma symptoms will go on to offend.

Sex Differences

It is crucial to recognise that patterns of trauma symptomatology and related demands will likely differ according to sex. Child maltreatment has been identified as a significant predictor of juvenile offending in males (Asscher et al., 2015). Males are more likely to develop externalising disorders (e.g., substance use; behavioural difficulties, anger; Chong et al., 2020) because of trauma, which can lead to delinquency and violent offending; while females are more likely to develop internalising disorders (e.g., depression, anxiety; SAMHSA, 2014). For example, Drapalski and colleagues (2009) found that females prisoners had higher rates of PTSD, whereas the prevalence of alcohol related problems were twice as high in male prisoners. However, Malvaso and Colleagues (2022) study found men to have slightly higher internalised trauma symptoms than females, specifically PTS and dissociation. Previous research has commonly focused on trauma symptom experiences in females, despite the fact males make up a larger proportion of the justice system population. Considering the literature thus far, it is important to explore more closely trauma symptom experiences in males.

Child Protection and Youth Justice System Responses

The YJ system refers to a set of ‘processes and practices’ put in place to manage children and adolescents who have committed, or allegedly committed an offence. In Australia, states and territories have their own legislation, policies, and practices; however, the general process whereby adolescents are charged, as well as the types of legal orders available to the courts tend to be comparable. Across 2020-21, Australian YJ systems were responsible for supervising 9,352 adolescents on legal orders (i.e., supervision takes place within the community or within a detention facility) at some point during the year (14 per 10,000; Australian Institute of Health and Welfare [AIHW], 2022).

Adolescents who have contact with the child protection (CP) system are over-represented in the YJ system, particularly those who have been placed into out-of-home care (OOHC; Baidawi & Sheehan, 2019). These adolescents who crossover between the CP and YJ systems can be particularly vulnerable to behavioural issues and tend to have more complex needs than the overall YJ population. This can be due to the fact that they have often been exposed to (both early onsets, protracted, and repeated) forms of maltreatment and/ or domestic violence that can create neurobiological vulnerabilities and the manifestation of trauma symptoms which make adjustment into OOHC difficult (Malvaso et al., 2022).

Theoretical Framework

In this field of research, it is important to understand and consider *how* experiences of adversity alter the developmental course of adolescence. The pervasive effects of maltreatment on a child's development, such as damage to neurological, physiological, and psychosocial functioning (which can lead to a range of physical, mental, social, behavioural, and economical adversities later in life), have long been recognised in the field of psychology. However, only recently have these themes of child maltreatment and family violence received significant attention in criminology. Developmental and life-course criminology (DLC) is a theory, that focuses on identifying and explaining within-individual changes in offending across the life-course. It focuses on the emergence of criminal and antisocial conduct, and aims to identify risk and protective factors, such as age, and certain life events that can impact the trajectory of development (Farrington, 2003). DLC recognises how exposure to potentially traumatic events and the psychological distress that accompanies it, play a significant role in altering cognition, emotions, and behavioural responses, which are known to increase pathways that lead to more serious offending. An example of a 'hypothesised pathway' is described by Malvaso et al. (2022): 1) an individual experiences an ACE(s), this potentially results in developing trauma symptom(s), 2) which in turn leads

to developing problematic behaviours (i.e., using drugs and alcohol, or acting aggressively). 3) These factors, when considered collectively, increase the likelihood of engaging in criminal behaviour. Essentially, DLC asserts that individual changes are pivotal to understanding the development of offending over the life-course, but it also recognises that behaviour is determined by interconnections between the individual and their environment.

Current Study

This study aims to provide further insight into the associations between trauma symptoms, ACEs, substance use, and behaviour in a representative sample of young men under YJ supervision in South Australia. Conclusions may help contribute to the development of innovative and integrated service responses for young men who offend and assist the agencies responsible for their care, protection, and rehabilitation.

Study Aims

This study will address three primary research questions:

1) Are there different groups of young men under YJ supervision who can be differentiated based on their clustering of trauma symptoms?

2) Do the groups identified in question one differ in terms of their experiences of adversity, substance use, and social and emotional behavioural problems?

3) Are there any differences between the groups in terms of recidivism and subsequent contact with YJ within 12-months of initial assessment?

Method

This study uses secondary, de-identified data that was previously collected by Dr. Catia Malvaso, for a study examining *Adverse Childhood Experiences and Trauma among Young People in the Youth Justice System* (2022). Dr. Malvaso collected data from 184 participants aged 14 and over (males: *n*=155; 84%; females: *n*=29; 16%) across a 12-month period, between March 2019 and February 2020. The study population sample is broadly representative of the South Australian YJ population (AIHW, 2020; Malvaso et al., 2022). Participants completed a number of self-report assessments that were later linked with their administrative CP and YJ records (if consent was granted). This study has received ethics approval from the University of Adelaide Human Research Ethics Committee (22/31) and is using a subsample of participants from Dr. Malvaso's original study. See Malvaso et al. (2022) for a more detailed overview of the original study.

Participants

This study utilises data from a subsample of the original study. Specifically, it focuses on the 155 young men (age range of 14-19 years, with a median age of 16). However, as the age of criminal offending in adolescents is 10 to 17 years (AIHW, 2022), charges are based on the age at which the offence was committed. Therefore, some participants (aged 18+) are included as their offence(s) took place during this period.

Measures and Materials

Measures used in this study include the following: the Trauma Symptom Checklist for Children (TSCC; Briere, 1996); an adapted version of the Adverse Childhood Experiences Questionnaire (Felitti et al., 1998); the Adolescent Alcohol and Drug Involvement Scale (AADIS; Moberg, 2005); and Child Behaviour Checklist-R Youth Self-Report (CBCL-YSR; Achenbach, 2001). Demographic information, including gender (male/female), age (in years), Aboriginal identification (yes/no), CP contact and YJ history was also obtained.

Self-Report Assessments

Trauma Symptom Checklist for Children

The TSCC is a 54-item tool that measures trauma symptoms across six clinical scales: Anxiety, Depression, Anger, PTS, Dissociation, and Sexual Concerns (Table 1). There are two subscales within the measure: Dissociation (Overt and Fantasy); and Sexual Concerns (Sexual Preoccupation and Sexual Distress). When completing the TSCC, participants are asked to report how often they have felt/experienced the symptoms over the last month, with response options based on a 4-point Likert scale ranging from 0 (not at all) to 3 (very often). Scores are calculated for the six clinical scales, with T-scores of >65 indicating clinically significant symptomatology, and T-scores of 60 to 65 indicating subclinical (but significant) symptomatology. The TSCC also includes eight critical items that can help identify areas requiring more immediate clinical attention (e.g., relating to self-harm, or harm towards others; see Table 3). Additionally, the scale has two validity checks to identify hyper-responding (i.e., over-reporting experiences) and under-responding (i.e., under-reporting experiences; Briere, 1996). Of the 155 young men who participated, seven (4.5%) were identified as hyper-responders, but they were included in the study sample following professional consultation which determined their scores were likely to reflect true symptoms experienced by young men in the justice system. However, 14 young men had invalid TSCC scores due to under-responding and so were not included in the trauma symptom results; this left a total of 141 young men. The TSCC has good psychometric properties (test-retest reliability of r=.81), and good construct validity (Lanktree et al., 2008).

Adverse Childhood Experience Questionnaire

The Adverse Childhood Experience Questionnaire (Felitti et al., 1998) comprises of 28 items that relate to 10 adverse experiences: 1) Emotional abuse; 2) Physical abuse; 3) Sexual abuse; 4) Emotional neglect; 5) Physical neglect; 6) Family violence; 7) Household

substance abuse; 8) Household mental illness; 9) Parental separation/divorce; and 10) Incarcerated household member. The questionnaire was adapted slight for the study to include three additional ACE questions: death of a close relative or friend; peer violence and bullying; and witnessing neighbourhood violence. Thus, there were 13 ACEs total that were assessed in their study. Additionally, 'family violence' (usually regarded as 'witnessing domestic violence'), was adapted to include all forms of family violence, rather than only violence towards women. Therefore, this revised version encompassed physical and psychological abuse between both parents, siblings, and adolescent violence against parents. Sexual abuse was also defined by using questions from Wyatt (1985), and alcohol and drug abuse were addressed through questions from the 1998 National Health Interview Survey (Blackwell & Tonthat, 2002). Exposure to ACEs were measured in several ways. Affirmative responses to any item of any ACE category were used to identify who had experienced particular ACEs. Regarding 'maltreatment' ACEs, administrative CP substantiations were used to create "combined self-reported and officially recorded exposure to physical, sexual, emotional abuse and neglect" (Malvaso et al., 2022, p. 14). The administrative data was not able to aid in differentiation of physical and emotional neglect, so they created a combined category 'any neglect' (based on both self-report information and administrative records). ACE total scores were calculated by summing all affirmative responses across the 13 categories. An ACE score of four or higher was used (based on the Centre for Disease Control's cut-off, 2015) to help understand the comparison between ACE exposure in the study's sample compared with other international studies.

Adolescent Alcohol and Drug Involvement Scale

Alcohol and drug use were measured using an adapted screening tool for adolescents based on the well-established Adolescent Drug Involvement Scale (Moberg & Hahn, 1991). The AADIS has good face validity and is considered a reliably measure (a=.94). When

completing, participants are asked to respond to questions in a way that best reflects how often they consume alcohol or use other drugs, with participants selecting a response on the scale ranging from 0 (never used) to 7 (several times a day). Total scores are obtained by adding the item scores, with scores of 37 or greater indicating alcohol or drug use that could meet DSM-5 criteria for substance use dependency. The AADIS has the capability of discriminating between adolescents diagnosed with/or without substance use disorders with a sensitivity of .62 and a specificity of .95 (Moberg, 2005). Additionally, the AADIS has a second component that includes 14 items relating to alcohol and drug involvement rated on a 5-to-8-point scale, with responses that are unique to each question. However, these 14 items are not reflected in the total score, but more so allow for further insight into these practices.

Child Behaviour Checklist-R Youth Self-Report

Behavioural and emotional problems, as well as social competencies, were assessed using the standardised Child Behaviour Checklist-R Youth Self-Report (CBCL-YSR; Achenbach, 2001) screening questionnaire, which has been normed for adolescents aged 11 to 18 years. The original study only used the syndrome profiles which comprised of 118 items across eight scales: Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Though Problems, Attention Problems, Rule-Breaking Behaviour, and Aggressive Behaviour, with scores ranging from 0 (absent) to 2 (occurs often). To obtain a Total Problems score, the scores of the eight syndrome scales are summed. Scale scores that are high indicate problems within these areas, with clinical ranges at or above the 84th percentile. Problems are broken down into Clinical (scores falling above the 97th percentile of the normative sample) and Borderline (scores falling between the 93rd and 97th percentiles) concerns. Syndrome scale scores are categorised into two groups: Internalising (where problems relate to/within the self), and Externalising (where problems tend to involve

conflict with others). The CBCL-YSR has good test-retest reliability (with mean scores ranging from .79 to .88).

Administrative Records

Youth Justice Details

Supervision order details (community-and custodial-based), age and first supervision type, supervision length and number of orders, were all extracted from the Connected Client Case Management System. All offence details (agreed to, proven, and/or convicted) were extracted from the Justice Information System. 'Proven' or 'agreed offences' refers to "those that have been legally sustained, but when the adolescent did not receive a formal conviction" (Malvaso et al., 2022, p. 12). Conviction type was recorded, as well as age at time of the individual's first agreed to, proven, or convicted offence, all of which were classified according to the third edition of the Australian and New Zealand Offence Classification. Follow-up at the 12-month period involved a second record extraction of YJ system information to assess recidivism and any details of new YJ supervision orders.

Child Protection

All notification details (i.e., alleged maltreatment, risk-of-harm, and adolescent-at-risk reports) made to the Department for Child Protection (i.e., investigations, substantiations, guardianship orders, and OOHC placement details) were extracted from the Client Information System and the Connected Client Case Management System. This information also included the age of each contact and/or placement, and number of contacts and/or placements. From these data, markers of 'ever being on a long-term guardianship order until age 18', 'ever placed in foster care', and 'ever placed in residential care' were created. Four young men did not consent to their CP records being accessed, thus are not reflected in the total (*N*) for CP history.

Procedure

In the original study, Dr. Malvaso liaised with case managers and staff at the community Youth Justice and Kurlana Tapa Youth Training Centre to identify adolescents who may have been willing to participate in their study. The data collection process occurred over a 12-month period (March 2019-February 2020). Eligibility criteria included adolescents both within the community or those in custody, who were aged 14 years or older. Study participation was entirely voluntary, with no incentives offered. Adolescents who agreed and consented to participate undertook an interview with Dr. Malvaso, where they were invited to complete a number of self-report assessments. Interview durations varied from 40 to 60 minutes. As this study utilises a subsample from the original study, this involved restricting the sample to just the young men (N=155). Of those young men, 55.5% (n=86) were interviewed within the community, and 44.5% (n=69) were in custody. Additionally, supervision order and offence details, as well as CP records were extracted from YJ databases and linked to their administrative records.

Analysis

All analyses for this study were conducted in Stata version 17, with Latent Class Analysis (LCA) performed using the Stata Plugin (version 1.2; Lanza et al., 2018; StataCorp, 2021). The analysis proceeded in three stages. First, LCA was conducted to determine whether there were groups of young men with distinguishable clusters of trauma symptoms. Second, we examined whether the experiences of adversity, substance use, and social and emotional behavioural problems differed between the groups identified in stage one. Last, we identified whether there were any differences between the groups regarding new offences and subsequent contact with YJ within 12-months from their initial assessment. Whilst p values are provided in the results, we advise that they not be used as a sole basis for interpretation, as recommended by the American Statistical Association (Wasserstein & Lazar, 2016).

Results

Descriptive Characteristics

Of the 155 young men, 43 (27.7%) were aged 14-15 years, and 112 (72.2%) were 16 years and older at the time of the first interview. Just over one-third (53; 34.2%) identified as Aboriginal and/or Torres Strait Islander. Over four-fifths of young men had a previous proven offence or conviction prior to the interview, with over half having committed a violent offence. The age of a first proven offence consisted of 60 (45.1%) young men aged 10-13 years, and 73 (54.9%) aged 14-17 years. Nine out of 10 young men were known to CP. Over half had been subject to an investigation for alleged maltreatment, with just under half the subject of at least one substantiation, and nearly one-third experiencing some form of government care (Table 2).

Table 2

Number and Proportion of Young Men with Previous YJ Contact, Offending, and CP History

	Total	
Offending History Prior to Interview	*n*	% Yes
Proven offence or conviction	133	85.8
Ever committed a violent offence	87	56.1
Ever on a community supervision order	145	93.6
Ever in custody	123	79.4
Child Protection History		
Known to CP	142	94.0
Notification regarding maltreatment	127	84.1
Ever subject of investigation	86	57.0
Ever subject of substantiation	69	45.7
Ever in OOHC	41	27.2
Ever on long-term guardianship order till age 18	19	12.6
Ever in residential care	30	19.9
Ever in foster care	14	9.3

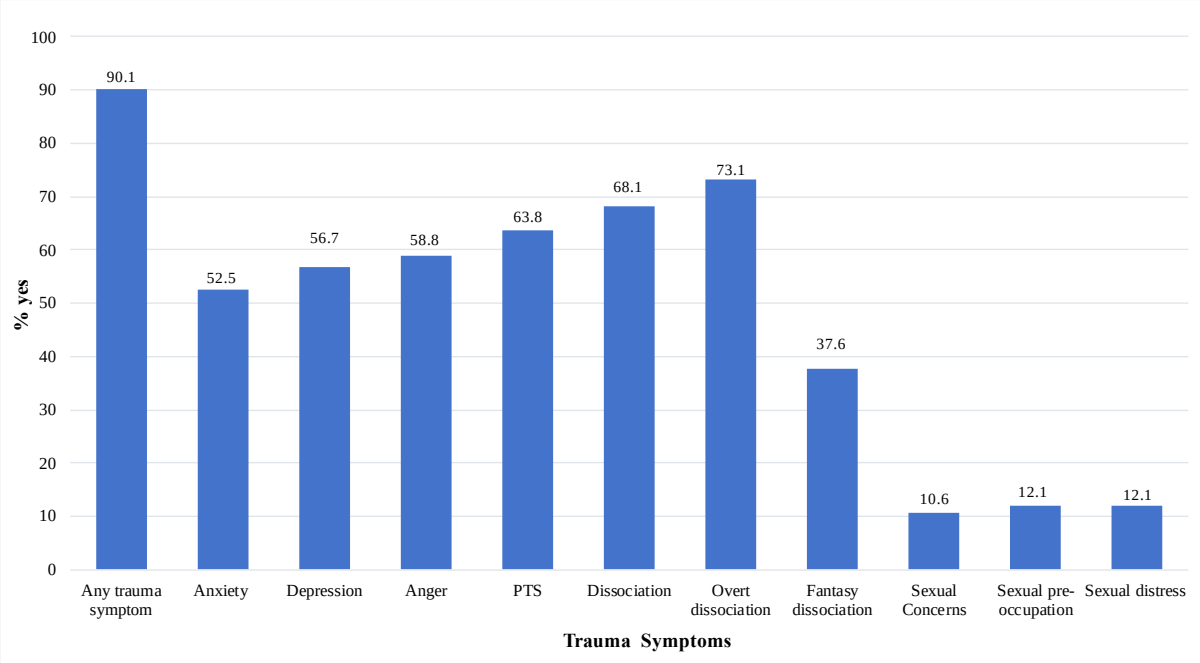
Note. $N = 155$ for Offence history; $N = 151$ for Child Protection history; YJ = Youth Justice; CP = Child Protection; OOHC = Out of home care.

Trauma Symptoms

A total of 127 (90.1%) young men had scores that were indicative of clinical level difficulties on at least one trauma symptoms scale (see Table A1 in Appendix A). The TSCC's two validity checks identified 14 young men who had invalid scores due to under-responding, thus they have been excluded, whilst seven hyper-responders were retained in the sample in that they were considered to have scores that were reflective of true symptoms experienced by young men in YJ. Figure 1 shows the prevalence of trauma symptoms according to each subscale of the TSCC. Approximately two-thirds displayed dissociation or PTS symptoms, with over half exhibiting symptomatology of anger, depression, and anxiety. The prevalence of sexual concerns symptoms was relatively low, but still prevalent in approximately one in 10 young men. A range of the eight critical items in the TSCC were endorsed by young men, with nearly one-third to over half reporting wanting to hurt themselves or others, and over three-quarters reporting getting into fights (Table 3).

Figure 1

Proportion of Young Men Endorsing Clinically Significant (or Subclinical) Scores on the Trauma Symptom Checklist for Children (%)



Note. N = 141; PTS = post-traumatic stress.

Table 3

Number and Proportion of Young Men Endorsing each Critical Item on the Trauma Symptom Checklist for Children

	Total	
Critical Items	*n*	% Yes
Wanting to hurt myself	46	32.5
Wanting to hurt others	84	59.6
Feeling scared of Men	26	18.4
Feeling scared of Women	43	30.5
Not trusting people because they might want sex	39	27.7
Getting into fights	110	78.0
Feeling afraid someone will kill me	36	25.5
Wanting to kill myself	38	27.0

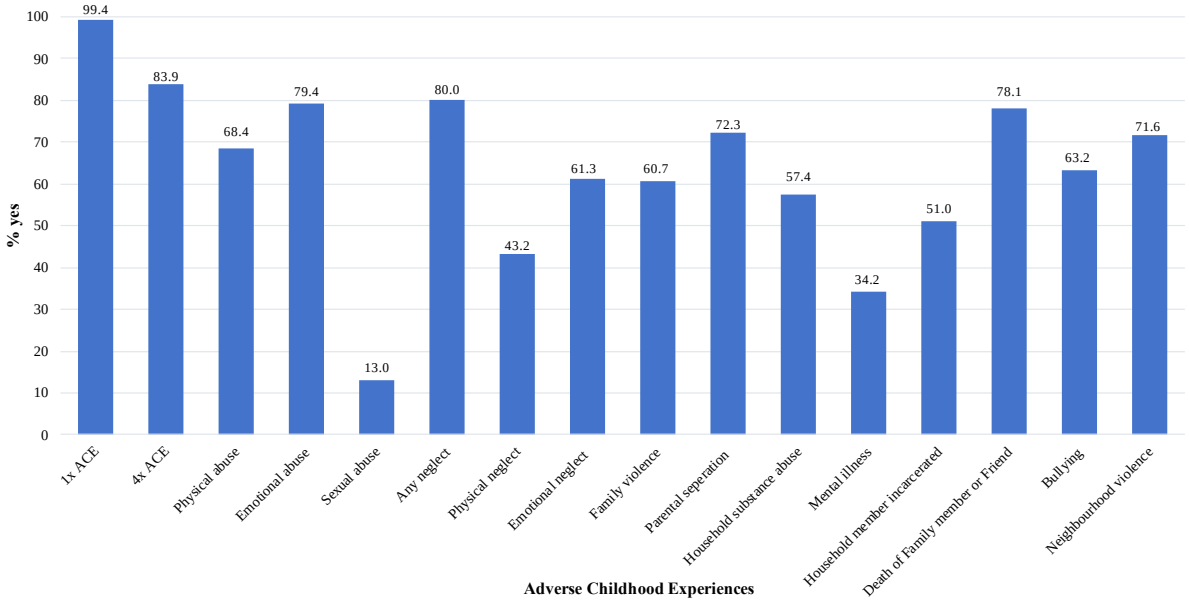
Note. N = 141; TSCC = Trauma Symptom Checklist for Children.

ACEs

Nearly all (99.4%) young men had experienced at least one ACE, with more than four-fifths experiencing four or more ACEs. Figure 2 shows the prevalence of each type of ACE. Over two-thirds of young men had experienced physical or emotional abuse, neglect, parental separation, death of a family member or friend, or were exposed to neighbourhood violence. Additionally, over half were exposed to some form of family violence or household substance abuse, had an incarcerated household member, or had been a victim of bullying (see Table A2 in appendix A).

Figure 2

Proportion of Young Men Reporting Adverse Childhood Experiences (%)



Note. N = 155; ACE = Adverse Childhood Experiences.

A total of 143 (92.3%) young men reported having experienced any one ACE frequently (i.e., ‘often’ or ‘very often’), specifically: physical abuse (45.1%), sexual abuse (5.2%), emotional abuse (61.3%), neglect (60.0%), family violence (44.5%), bullying (43.2%), and neighbourhood violence exposure (39.3%).

Substance Use

Over four-fifths of young men had scores indicating problematic drug and/or alcohol use (Table 4). Marijuana was the most commonly used drug, reported in two-thirds of the sample, with over half reporting smoking marijuana daily. Daily tabaco use was reported in just under half, with just over one-third consuming alcohol weekly, whilst daily consumption was on the lower spectrum.

Table 4

Number and Proportion of Young Men Endorsing Use of Different Substances

	Total	
Substance Abuse	*n*	% Yes
Any substance use	133	85.8
Daily		
Tabaco	75	48.3
Alcohol	9	5.8
Marijuana	82	52.9
Weekly		
Alcohol	59	38.0
Marijuana	106	68.4

Note. $N = 155$.

Social and Emotional Behavioural Problems

Nearly two-thirds of young men provided responses that reflected the presence of internalising behavioural problems, with evidence that over four-fifths experienced externalising behavioural problems (including rule-breaking behaviours), and over half presenting with aggressive behaviours or attention problems. Over one-third scored in the clinical ranges for anxious/depressed, withdrawn/depressed, and social problems, with just under half displaying thought problems. Additionally, just under one-third reported signs suggesting somatic complaints (Table 5).

Table 5

Number and Proportion of Young Men Scoring in the Symptomatic Ranges of the Child Behaviour Checklist Youth Self-Report

	Total	
Social and Emotional Behavioural Problems	*n*	% Yes
Internalising	101	65.2
Externalising	133	85.8
Total Problems	128	82.6
Anxious/Depressed	59	38.1
Withdrawn/Depressed	67	43.2
Somatic complaints	49	31.6
Social problems	54	34.8
Though problems	74	47.7
Attention problems	78	50.3
Rule-breaking behaviour	124	80.0
Aggressive	88	56.8

Note. $N = 155$.

Q1. Are there Different Groups of Young Men under YJ Supervision who can be Differentiated Based on their Clustering of Trauma Symptoms?

To answer the first question, a LCA was conducted to identify potential underlying subgroups of young men who share similar trauma symptom characteristics. After testing two-, three-, and four LCA models, the four-class model was chosen based on its fit statistics and face validity checks (Table 6; see Table B1 in Appendix B for a summary of latent class membership). Although the four-class model had a slightly lower entropy score, the subgroups across the six trauma symptoms were more clearly interpretable, whereas the three-class model did not sufficiently separate the trauma symptom groups, despite having the highest entropy. A five-class model was also conducted but had insufficient (< 5) young men in one group, thus it was not considered for selection.

Table 6

Fit Statistics for Two-, Three- and Four Class Trauma Symptoms Latent Class Analysis

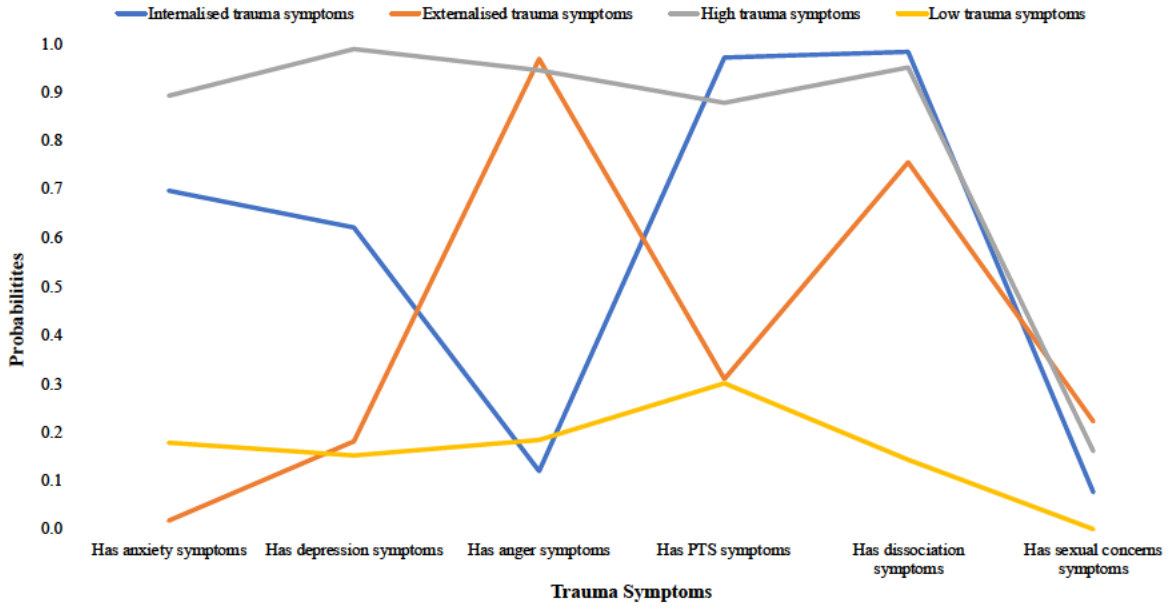
Latent classes	G^2	AIC	BIC	CAIC	aBIC	Entropy R^2
2	59.27	85.27	123.60	136.60	82.47	.81
3	43.84	83.84	142.82	162.82	79.54	.87
4	26.97	80.97	160.59	187.59	75.16	.80

Four subgroups of young men under YJ supervision were identified from the LCA, based on their patterns of trauma symptoms (Figure 3):

1. an **internalising trauma symptoms** group, where there was a higher probability of experiencing internalising trauma symptoms (such as anxiety, depression, PTS, dissociation; *n*=23; 15%);
2. an **externalising trauma symptoms** group, where there was a higher probability of experiencing externalising trauma symptoms (such as anger; *n*=16; 10%);
3. a **high trauma symptoms** group, where the probability of experiencing all trauma symptoms (except sexual concerns) was high (*n*=57; 37%); and
4. a **low trauma symptoms** group, where the probability of experiencing any trauma symptoms was low (*n*=45; 30%).

Figure 3

Four-Class Model of Trauma Symptoms



Note. $N = 141$.

Q2. Do the Groups Identified in the LCA Differ in Terms of their Experiences of ACEs, Substance Use, and Social and Emotional Behavioural Problems?

Overall, the high trauma symptoms group had the highest proportion of young men reporting any ACE. Experiences of physical and emotional abuse were highest amongst the high trauma symptoms group (80.7% and 91.2%, respectively); however, emotional abuse was reported in just over three-quarters of the internalising and externalising trauma symptom groups. Sexual abuse was relatively low across all groups, with just under one-quarter of the high on all trauma symptoms group having reported experiences. Experiences of any neglect were relatively high across all groups (>74%); however, physical, and emotional neglect were highest among the high trauma symptoms group. Under half of the internalising and externalising trauma symptom groups experienced family violence, with over four-fifths reporting it in the high trauma symptoms group.

There were some differences in household dysfunction across groups, such as parental separation, having a household member with substance abuse problems, mental illness or

being incarcerated. Parental separation was lowest in the internalising trauma symptoms group (56.5%), with over three-quarters of young men in the externalising and high trauma symptom groups having experienced parental separation. Just over half of the internalising, externalising, and low trauma symptom groups had a household member who abused substances, with over two-thirds in the high trauma symptoms group. Household mental illness was relatively low across three groups (<38%), with the high trauma symptoms group reporting over half. Having a household member incarcerated was relatively similar across the externalising (62.5%) and high (66.1%) trauma symptom groups. Over three-quarters of the low trauma symptoms group reported having a family member/ or friend pass, whilst nearly all (94.6%) of the high trauma symptoms group reported it. The highest proportion (82.6%) of young men to experience bullying was reported in the internalising trauma symptoms group. Reports of neighbourhood violence were relatively similar across all groups, with over three-quarters reporting it in the externalising and high trauma symptom groups, and over two-thirds in the internalising and low trauma symptom groups.

Substance Use

Overall, the proportion of young men who had scores indicating problematic substance use was high across all groups (>82.2%), with all young men in the externalising trauma symptoms group presenting with such issues. Daily marijuana use was highest among the externalising and high trauma symptom groups, with the internalising, high, and low trauma symptom groups reporting weekly marijuana use in over two-thirds of young men. Weekly alcohol use was most common among the externalising and high trauma symptom groups, with the internalising and low trauma symptom groups suggesting less of a desire to consume alcohol regularly.

Social and Emotional Behavioural Problems

Similar to the patterns observed for ACEs, there was a general pattern whereby the high trauma symptoms group had the highest scores across all areas, indicating problematic social and emotional behavioural problems, except for externalising and aggressive behaviour which were slightly higher in the externalising trauma symptoms group. The proportion of young men scoring in the symptomatic range for internalising social and emotional behavioural problems was high across both the internalising and high trauma symptom groups (95.7 and 96.5% respectively). Over four-fifths (>82%) of young men across all groups scored in the symptomatic range for externalising social and emotional behavioural problems, inclusive of rule breaking (>76%). Aggressive behaviour was most prominent in the externalising and high trauma symptom groups (>89%) and was reported in just under one-third of the internalising and low trauma symptom groups. The high trauma symptoms group had the highest proportion of young men experiencing thought (80.7%) and attention (73.7%) problems, with just over half of the internalising trauma symptoms group expressing difficulties in these areas. Feeling anxious/depressed was significantly low across the externalising and low trauma symptom groups, with half to nearly three-quarters experiencing such emotions in the internalising and high trauma symptom groups, respectively. Somatic complaint and social problems showed similar patterns across the externalising and low trauma symptom groups (<20%), whereas feeling withdrawn/depressed was present in over three-quarters of the high trauma symptoms group.

Table 7

Comparison of Subgroups of Young Men According to Patterns of Trauma Symptoms, by Age, Child Protection History, Adverse Childhood Experiences, Substance Use, and Social and Emotional Behavioural Problems (%)

	Internalising trauma symptoms (*n*=23; 15%)	Externalising trauma symptoms (*n*=16; 10%)	High trauma symptoms (*n*=57; 37%)	Low trauma symptoms (*n*=45; 30%)	Pearson's Chi-square	*p*
	%	%	%	%		
Age					19.18	.084
14-15 years	13.0	43.6	29.8	26.7		
16+ years	86.6	56.3	70.2	73.3		
CP History						
Any CP contact	86.4	100	91.2	97.7	4.65	.199
Any OOHC placement	13.6	26.7	28.1	29.6	2.16	.540
ACEs						
Physical abuse	60.9	75.0	80.7	64.4	4.85	.183
Sexual abuse	13.0	6.3	21.0	6.7	5.32	.15
Emotional abuse	78.3	81.3	91.2	68.9	8.22	.042
Any neglect	73.9	75.0	91.2	77.8	5.44	.142
Physical neglect	34.8	37.5	67.9	31.1	16.29	.001
Emotional neglect	65.2	62.5	82.1	51.1	11.15	.011
Family violence	43.5	43.8	87.5	55.6	22.08	<.001

	Internalising trauma symptoms (*n*=23; 15%)	Externalising trauma symptoms (*n*=16; 10%)	High trauma symptoms (*n*=57; 37%)	Low trauma symptoms (*n*=45; 30%)	Pearson's Chi-square	*p*
	%	%	%	%		
Parental separation	56.5	75.0	80.4	72.7	4.77	.189
Household substance abuse	52.2	25.0	71.4	55.6	4.03	.258
Household mental illness	34.8	37.5	51.8	20.0	10.86	.012
Household member incarcerated	43.5	62.5	66.1	40.0	8.31	.04
Death of a family member or friend	69.6	62.5	94.6	77.8	12.79	.005
Bullying	82.6	62.5	78.6	48.9	12.88	.005
Neighbourhood violence	69.6	75.0	83.6	68.9	5.80	0.324
Problematic Substance Use						
Problematic use	82.6	100	93.0	82.2	5.80	.122
Daily tabaco	26.0	68.8	66.7	40.0	15.49	.001
Daily marijuana	43.5	62.5	59.7	48.9	2.69	.441
Weekly alcohol	21.7	62.5	47.4	35.6	8.08	.044
Weekly marijuana	69.6	62.5	77.2	66.7	2.05	.562

	Internalising trauma symptoms (*n*=23; 15%)	Externalising trauma symptoms (*n*=16; 10%)	High trauma symptoms (*n*=57; 37%)	Low trauma symptoms (*n*=45; 30%)	Pearson's Chi-square	*p*
	%	%	%	%		
Social and Emotional Behavioural Problems						
Internalising	95.7	43.8	96.5	37.8	55.37	<.001
Externalising	87.0	100	98.3	82.2	10.40	.015
Total problems	100	100	100	66.7	35.81	<.001
Anxious/depressed	52.2	6.3	73.7	8.9	53.17	<.001
Withdrawn/depressed	47.8	31.3	77.2	15.6	40.26	<.001
Somatic complaints	43.5	18.6	56.1	8.9	27.36	<.001
Social problems	30.4	6.3	66.7	17.8	34.99	<.001
Thought problems	56.5	43.8	80.7	17.8	40.57	<.001
Attention problems	65.2	43.8	73.7	24.2	26.46	<.001
Rule breaking behaviour	78.3	87.5	93.0	75.6	6.64	.084
Aggressive behaviour	30.4	100	89.5	28.9	58.55	<.001

Note. *N* = 141; CP = Child Protection; OOHC = out of home care; ACE = Adverse Childhood Experiences.

Q3. Are there any Differences Between the Groups in Terms of Recidivism and Subsequent Contact with YJ within 12-Months from Initial Assessment?

Offence History

The proportion of young men to have a proven offence prior to their first interview was high across all groups (>75%), with the low trauma symptoms group having the highest proven offence rate (91.1%).

Recidivism and New YJ Orders

In relation to recidivism, over three-quarters of young men across all groups had received a new conviction within the 12-months from their initial interview (Table 8). Specifically, the externalising trauma symptoms group had the highest recidivism (100%) rates among young men. Just over two-thirds of young men in the externalising and low trauma symptom groups had a new YJ order, with the internalising trauma symptoms group having the lowest proportion of young men with a new YJ order.

Table 8

Comparison of Subgroups of Young Men According to Patterns of Trauma Symptoms, by Previous Offence History and Recidivism 12-Months Post Interview (%)

	Internalising trauma symptoms (*n*=23; 15%)	Externalising trauma symptoms (*n*=16; 10%)	High trauma symptoms (*n*=57; 37%)	Low trauma symptoms (*n*=45; 30%)	Pearson's Chi-square	*p*
	%	%	%	%		
Offending history prior to interview						
Proven offence or conviction	78.3	75.0	86.0	91.1	3.45	.327
Recidivism						
Any new conviction 12-months post interview	81.8	100	75.4	79.6	4.60	.203
Any new YJ order 12-months post interview	40.9	73.3	57.9	68.2	5.79	.122

Note. N = 141 for offending history prior to interview; N = 138 for recidivism 12-months post interview as three young men were over 18 years of age when they committed a new offence, thus they could not be included in the analysis for any new conviction(s) or YJ orders.

Discussion

The present study aimed to gain further insight into the types of trauma symptoms experienced by young men under YJ supervision in South Australia. Specifically, the aims were to 1) determine if there are groups of young men with distinguishable clusters of trauma symptoms; 2) compare their experiences of adversity, substance use and social and emotional behavioural problems across groups; and 3) examine potential differences between the groups regarding recidivism and subsequent YJ contact 12-months following their initial interview. In line with DLC theory, this study found that, not only did the majority of young men under YJ supervision report trauma symptomatology, but they also reported experiencing a number of ACEs that may have altered their course of development, consequently leading to substance use, social and emotional behavioural problems, and offending behaviour.

Prevalence of Trauma Symptoms, ACEs, Substance Use, and Social and Emotional Behavioural Problems across Young Men under YJ Supervision in South Australia

The prevalence of trauma symptoms, ACEs, substance use, and social and emotional behavioural problems were high, with over four-fifths of young men with scores indicating clinically significant symptomatology within these areas. These results are not overly surprising within the context of the criminal justice system and are consistent with previous research. For example, in both Australian (e.g., Prichard & Payne, 2005) and International (e.g., McCuish, 2017) studies, a higher prevalence of substance use problems within justice-involved adolescents has been observed. However, some of our results were higher than those reported in previous research. For example, our findings for social and emotional behavioural problems were between two to two-and-a-half times higher than those found in Sawyer and colleagues (2010) study looking at adolescents remanded in South Australian custody in 2008-09. Furthermore, the prevalence of ACEs in this study, when compared to Malvaso and colleagues (2021) systematic review, highlight a significantly higher prevalence of most

individual ACEs than the pooled prevalence's from the studies included in the review (most between two-and-a-half and three-times higher in this study). However, studies included in the systematic review were predominately conducted in the United States (where the focus is more punitive). These differences may simply highlight that South Australian YJ supervision is primarily reserved for more serious, or repeat offences, with a stronger focus on diversion (i.e., reflected a welfare-based approach); or it could reflect possible differences in sampling. This highlights the need to continue collecting local data that more effectively reflects true experiences within the population of interest (Malvaso et al., 2022).

Clustering of Trauma Symptoms

LCA (a model cluster-based analysis that identifies underlying subgroups of individuals with shared characteristics; Malvaso et al., 2022) was used to determine whether experiences of trauma symptoms were uniform across the whole YJ population or whether there were distinct patterns for subgroups of young men. Using LCA demonstrated that there were discrete classes of young men who experience similar combinations of trauma symptoms. The LCA identified four subgroups of young men based on their trauma symptom patterns: 1) an internalising trauma symptoms group (i.e., high probabilities of experiencing anxiety, depression, PTS, dissociation); 2) an externalising trauma symptoms group (i.e., high probability of experiencing anger); 3) a high trauma symptoms group (high probabilities of experiencing all trauma symptoms); and 4) a low trauma symptoms group (where the probability of experiencing any of the trauma symptoms was comparatively lower, although still evident in up to 30% of young men depending on the symptom).

Exposure to potentially traumatic events or experiencing adversity are strong predictors of developing trauma symptoms (Finkelhor et al., 2007b). Broadly speaking, when comparing the differences between classes, the high trauma symptoms group included the highest proportion of young men experiencing any individual ACE, except for bullying

which was highest in the internalising trauma symptoms group. This finding is consistent with other studies that employed LCA, in which the subgroup who had experienced a multitude of ACEs exhibited the highest trauma symptoms (Turner et al., 2020). However, as noted, experiences of victim bullying were highest among the internalising trauma symptoms group. This is consistent with bully/victim research, where victims of bullying generally tend to exhibit greater internalising problems (specifically depression, anxiety, and psychological dissociation; Plexousakis et al., 2019; Wolke & Lereya, 2015). Additionally, the development of trauma symptoms has been shown to increase with experiences of emotional abuse and neglect (Pears et al., 2008). Across the internalising, externalising, and high trauma symptom groups, over three-quarters reported experiences of emotional abuse. However, the prevalence of neglect was high across all groups, including the low trauma symptoms group which had a slightly higher prevalence of neglect than the internalising and externalising trauma symptom groups. This does not necessarily contradict previous research but may highlight the fact that young men experiencing neglect may have under-reported their experiences of trauma symptoms. Furthermore, two in 10 young men in the high trauma symptoms group had experienced sexual abuse (distinguishing them from the other groups) suggesting that specialist services may be beneficial for a small group of young men.

Substance use scores were significantly high across all groups. Over four-fifths of young men from three group scored in the range suggesting clinically diagnosable substance use disorders, with all young men in the externalising trauma symptoms group endorsing such scores. These findings are relatively unsurprising, as trauma symptomatology (particularly PTSD; Funk et al., 2003) and substance use are highly correlated (Ford et al., 2012). This could indicate that young men are using substances to self-medicate or escape problems, reduce their stress, or to feel less alone. Moreover, the psychological sequelae of exposure to potentially traumatic events and its development of trauma symptoms (which

consequently increase the likelihood of developing substance use problems), are known to be highly prevalent among the YJ population (de Andrade et al., 2018).

As with substance abuse, social and emotional behavioural problems were also high across all groups. While internalising behavioural problems were only elevated in the internalising and high trauma symptom groups, externalising behavioural problems were found in over four-fifths of young men across all groups. This suggests that young men with internalising symptoms may experience the co-occurrence of some externalising symptoms too. It is not uncommon for those who develop externalising problems (i.e., anger, aggression, hostility, impulsivity, substance use) in response to adversity, to have an increased risk of engaging in delinquent behaviour (Darnell et al., 2019). Sometimes, externalising behaviours are misinterpreted as being characterised by disorders such as Attention-deficit/hyperactivity disorder, when they instead are maladaptive coping mechanisms used to deal with repercussions from prior adversity. This could suggest that what may superficially appear to be behaviours such as CU traits or proactive aggression, might actually be a defensive response reaction (Ford et al., 2012). Furthermore, as substance use was high across all groups, it could be hypothesised that this increases the risk of developing externalising problems (or vice versa: externalising behaviour increases substance use), which might help explain the high prevalence across the young men. Thus, understanding the timing/sequencing of these factors could be important as they could help understand which precipitates the other.

Despite being able to identify distinct groups of young men with specific trauma symptomatology, it is unclear whether these groupings are helpful in terms of providing insight into which groups are more likely to re-offend. That is, recidivism was high across all groups, with over three-quarters of young men in each group having a new conviction 12-months post interview. This could potentially be conceptualised by the fact that, despite the

LCAs grouping of similar trauma symptoms, most young men have likely endured a range of different experiences of adversity, and present with significant levels of substance abuse and behavioural problems by the time they enter YJ supervision, making it difficult to determine who is likely to re-offend. Furthermore, nearly all young men across all groups had a history of CP contact, and adolescents known to CP are nine-times more likely than those not known to CP to offend, and therefore come under YJ supervision (AIHW, 2019). Although causal links of maltreatment and offending remain unclear, identifying these issues early to aid in prevention, or provide services to help identify and rehabilitate young men, could help with diversion from the justice system.

The identification of a low trauma symptoms group could suggest that there are other pathways that lead to YJ contact among those who have experienced maltreatment and adversity, particularly in relation to breakdowns in family structure/support (i.e., parental separation, death in the family, neglect) and the consequential effects (such as loss of protective factors) it may have on adolescents. As Arrendondo (2003) and Ward (2020) noted, it is these experiences that increase vulnerabilities of being influenced and associating one-self with negative peers, which could potentially explain the high rates of offending and recidivism within this group.

Furthermore, while trauma symptoms were relatively low in this class, PTS was still present in approximately 30% of young men. Although this could be an underestimation (due to under-reporting), the over-reliance of PTSD as an indicator of trauma symptomatology has been discussed as being problematic, especially within the context of the justice system. For example, Boswell (2016) conducted a study of 21 young, incarcerated men in the United Kingdom, all of whom suffered ‘damaged and disturbed’ upbringings. Her results found only two of the 21 men met the diagnostic criteria for PTSD, ‘despite’ the fact they all suffered psychological dysfunction. Therefore, if the only measure of the presence of trauma

symptoms was through a PTSD diagnosis, any identified sample of 'traumatised' individuals will unquestionably underestimate its presence, thus leaving a considerably reduced sample within the general population (Briere & Scott, 2006). This has significant implications because, for example, during sentencing judges commonly adopt a conventional approach when considering prior experiences of adversity, and usually rely on the DSM-5 for clinical diagnoses (McLachlan, 2022). Thus, it should not be relied upon as a sole 'medicalised marker' when concepts like cPTSD may better explain such behaviours.

Overall, the LCA results were able to provide evidence of discrete groups of young men who exhibit similar trauma symptomatology; however, its ability to differentiate between the other characteristics (ACEs, substance abuse, social and emotional behaviour) were less clear. For example, problematic substance use was high across all groups, with the vast majority also reporting serious social and emotional behavioural problems. This indicates that substance abuse and behavioural problems are seemingly widespread among young men under YJ supervision, regardless of their trauma symptoms, suggesting that all young men may benefit from specialised assessment and treatment across these areas. Nevertheless, as has been noted by Lee and Taxman (2020), LCA results continue to strengthen the argument that approaches to the assessment and treatment of justice-involved adolescents needs to be more holistically focused.

Policy and Practice Implications

Current conventional YJ service models and programs may be lacking in their ability to respond to the needs and vulnerability of young men who offend, which suggests a strong need for these agencies to better assess trauma symptoms and refer to services which can effectively respond to their psychological and behavioural sequelae. As Malvaso et al. (2022) stated, the Australian YJ system has been described as 'approaching a state of crisis', as is evident in the Royal Commission into the Protection and Detention of Children in the

Northern Territory's (2017) report, where they acknowledged their "youth detention centres were not fit for accommodating, let alone rehabilitating young people" (p. 12). This suggests that current programs (or more likely, lack thereof) may consequently be part of the reason for higher rates of return to YJ. It might be that a focus on trauma-informed responses may be more beneficial to help assist young men to return to more prosocial pathways.

Whilst prevention is highly important (as it is the best way to ensure young people do not come into contact with YJ), intervention efforts are also crucial, as many developmental trajectories become firmly fixed during adolescence (Arrendondo, 2003). However, brain neuroplasticity research notes that these trajectory pathways and behavioural patterns can be changed when provided with the right guidance and support (Ward, 2020). As has been shown in this study, however, the needs of justice-involved young men are complex, which highlights that a one-size-fits-all approach may not be appropriate. Therefore, intervention approaches need to be conducted in a way that meets the individual needs and differences of young men. As our results found externalising behaviours (i.e., aggression) and anger to be quite widespread, this could suggest that interventions targeting emotional regulation (employed alongside behavioural management approaches that target anger) more broadly, could be beneficial. Additionally, delving into where anger developed (i.e., historical, socio-political), or its triggers, could help identify areas for effective treatment. Furthermore, a large proportion of young men experienced symptoms of PTS and dissociation, highlighting this to be another key area of potential treatment.

Additionally, this study has potential implications for screening, assessment, and referral to appropriate treatment and support. YJ agencies may be limited in their ability to provide intensive treatment over an appropriate duration due to short mandates (usually being three-to-12-months). As many young people are typically on remand or bail during this time (meaning their offence has not been proven), this limits the YJs scope to be able to work on

any criminogenic factors with young people under their supervision (Mazerolle & Sanderson, 2008). As ACEs have been shown to increase the risk for engaging in criminal behaviour (Malvaso et al., 2021), it could be a point of assessment to help case planning and referral to appropriate services. However, screening for ACEs has its limitations. Whilst it can collect information to target protective measures, this is only beneficial if there are established interventions and evidence-based treatment resources available (Finkelhor, 2018). Additionally, concern has been raised regarding its misapplication, where it is promoted as a screening or diagnostic tool used at the individual level, when its purpose was designed to be used at the population level and for research. For example, scores are not standardised, and have not undergone rigorous scientific review to determine which factors best predict outcomes (Anda et al., 2020; Finkelhor, 2018). Furthermore, it cannot assess the full severity, frequency, or chronicity of exposure to ACEs, account for gender differences or variations in exposure timing. Thus, no arbitrary score (or range of scores) should be elected as a decision-making cut-point, or to infer information about individual risks for health outcomes, as this may lead to either an over-or-under-estimation of risk (Anda et al., 2020). Therefore, it may be more appropriate to employ ACE screening alongside other assessments of trauma symptoms, substance use, and social and emotional behavioural problems to gain a more comprehensive understanding of areas requiring greater attention and referring to appropriate services.

The focus on trauma-informed responses to young people who commit crimes is consistent with the 10 Pillars of Youth Justice (see Ward, 2020 for a review), which has identified some key aspects which should be considered when rethinking the current policy and practices of the YJ system (such as: partnering with education, addressing and tailoring responses to trauma and its complexity therapeutically, and privileging engagement and relationships between staff and young people). A key point is to ensure that practices come

from a trauma-informed-care perspective to help build rapport with young people and know how to appropriately respond in times of crisis. Overall, developing new treatment/assessment plans or installing good evidence-based practices, could help with the rehabilitation and reduced recidivism of young offenders.

Study Strengths and Limitations

Many studies in this area utilise administrative government data to provide insight into associations between maltreatment and offending, but these studies are often limited by a lack of detail regarding trauma and other relevant symptoms that might impact this association. This study utilised data from a sample that is representative of the South Australian YJ population and assessed a range of potentially important mediating factors that can only be most meaningfully assessed through face-to-face interviews. With regard to ACEs, obtaining data from different sources (triangulating self-report experiences with CP records) enabled a more expansive range of experiences to be captured. Thus, ACE estimates within this study are more comprehensive than those from studies using only self-reported data or administrative data.

It is well-known that self-reported data in this area runs the risk of obtaining inaccurate information when participants chose not to report truthfully (for example in reporting substance use). Similarly, it is not uncommon for males to under-report exposure to potentially traumatic events (Malvaso et al., 2022). This could be due to embarrassment, fear, or because they normalise certain events (such as family/household violence), that females may not. This is why including both self-report and administrative data is helpful. On the other hand, trauma symptoms cannot be meaningfully assessed using administrative data, so self-report methods were employed. It is possible that some under-reporting occurred, with 14 young men having invalid TSCC scores for this reason. Furthermore, the cross-sectional nature of this study's data means conclusions could not be drawn about the potential causal

associations between trauma, ACEs, and offending; nor whether substance use/behavioural problems mediated the associations between these factors. Therefore, longitudinal research that aims to better understand the mechanisms that underlie pathways from adversity and trauma to offending, could help identify opportunities for prevention and early intervention. Additionally, as this study relies on data from one jurisdiction (South Australia), it would be important to replicate in others, as this could feed into a national agenda about better responding to the needs of young people in YJ, which could hopefully lead to less engagement with the justice system.

Concluding Remarks and Future Research

This study highlights that it is important to continue to research the needs of young people in YJ, so that policies and practice can be accordingly adapted and tailored to the changes of the YJ population. This research identified four groups of young men who experienced distinct types of trauma symptomatology; however, these groups could not be used to meaningfully discriminate between other characteristics, including ACEs, substance use, social and emotional behavioural problems, and importantly, recidivism. Therefore, it strengthens the argument for more holistic approaches to assessment and treatment and highlights that prevention and intervention efforts are crucial for change to be observed. Within YJ, externalising behaviour and substance use problems look to be areas that could be targeted in interventions. Future longitudinal research within this area that is focused on uncovering the ‘when, how and for whom’ trauma is associated with offending, could provide greater insight into opportunities for prevention and intervention.

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Appendix A

Table A1

Number and Proportion of Young Men Endorsing Clinically Significant (or Subclinical) Trauma Symptom Checklist for Children Scores

	Total	
Trauma Symptoms	*n*	% Yes
Any	127	90.1
Anxiety	74	52.5
Depression	80	56.7
Anger	83	58.8
PTS	90	63.8
Dissociation	96	68.1
Overt	103	73.1
Fantasy	53	37.6
Sexual Concerns	15	10.6
Pre-occupation	17	12.1
Distress	17	12.1

Note. $N = 141$; PTS = post-traumatic stress.

Table A2

Number and Proportion of Young Men Reporting Adverse Childhood Experiences

	Total	
Adverse Childhood Experiences	*n*	% Yes
1x ACE	154	99.4
4x ACE	130	83.9
Abuse		
Physical	106	68.4
Emotional	123	79.4
Sexual	20	12.9
Neglect		
Any	124	80.0
Physical	67	43.2
Emotional	95	61.3
Family violence	94	60.7
Parental separation	112	72.3
Household substance abuse	89	57.4
Household mental illness	53	34.2
Household member incarcerated	79	51.0
Death of family member or friend	121	78.1
Bullying	98	63.2
Neighbourhood violence	111	71.6

Note. $N = 155$; ACE= Adverse Childhood Experience.

Appendix B

Table B1

Class Membership and Item Response Probabilities for Four-Class Model of Trauma Symptoms

	Internalising trauma symptoms (*n*=23, 15%)	Externalising trauma symptoms (*n*=16, 10%)	High trauma symptoms (*n*=57, 37%)	Low trauma symptoms (*n*=45, 30%)
Latent class membership	.151	.133	.407	.309
Anxiety				
Yes	0.696	0.017	0.892	0.178
No	0.304	0.983	0.108	0.822
Depression				
Yes	0.623	0.180	0.991	0.151
No	0.337	0.802	0.009	0.849
Anger				
Yes	0.120	0.968	0.946	0.184
No	0.880	0.032	0.054	0.816
PTS				
Yes	0.973	0.308	0.879	0.301
No	0.027	0.692	0.121	0.699
Dissociation				
Yes	0.984	0.757	0.953	0.142
No	0.016	0.243	0.047	0.858
Sexual Concerns				
Yes	0.075	0.223	0.160	0.001
No	0.925	0.777	0.804	0.999

Note. N = 141; PTS = post-traumatic stress.