



**Exploring the onset, duration and temporal ordering
of adverse childhood experiences in young people
adjudicated for sexual offences:
A longitudinal qualitative study**

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ANROWS acknowledges the Traditional Owners of the land across Australia on which we work and live. We pay our respects to Aboriginal and Torres Strait Islander Elders past, present and future, and we value Aboriginal and Torres Strait Islander histories, cultures and knowledge. We are committed to standing and working with Aboriginal and Torres Strait Islander peoples, honouring the truths set out in the [Warawarni-gu Guma Statement](#).

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Exploring the onset, duration and temporal ordering of adverse childhood experiences in young people adjudicated for sexual offences: A longitudinal qualitative study

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This report addresses work covered in the ANROWS research project RP.20.07 "Adverse childhood experiences and the intergenerational transmission of domestic and family violence in young people who engage in harmful sexual behaviour and violence against women". Please consult the [ANROWS website](#) for more information on this project.

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ANROWS acknowledges the lives and experiences of the women and children affected by domestic, family and sexual violence who are represented in this report. We recognise the individual stories of courage, hope and resilience that form the basis of ANROWS research.

Caution: Some people may find parts of this content confronting or distressing. Recommended support services include 1800RESPECT (1800 737 732) and Lifeline (13 11 14).

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Acronyms

ACEs	Adverse childhood experiences
CDC	Centers for Disease Control and Prevention
DFV	Domestic and family violence
GYFS	Griffith Youth Forensic Service
YANSV	Youth adjudicated for nonsexual violent offences
YASO	Youth adjudicated for sexual offences

Executive summary

Background

Extant literature compellingly demonstrates the prevalence among and impact of adverse childhood experiences (ACEs) on youths, who themselves become involved in the juvenile justice system and perpetrate sexual violence and abuse against women and children. ACEs can be conceptualised as 10 conditions that include maltreatment and household dysfunction. As our understanding of justice-involved young people continues to evolve, we now take for granted the suite of complex individual characteristics and the impact of cumulative trauma that often precede criminal and sexually aggressive behaviour, especially that which is directed towards women and children.

After decades of research on the long-term consequences of child maltreatment, the bulk of our knowledge continues to be derived almost entirely from a now rather dated 10-item checklist of dichotomous (never/ever) variables (CDC, 2019; Felitti et al., 1998). This project extends our understanding of childhood adversity by examining the timing, placement and temporal ordering of several early developmental experiences known to be empirically correlated with subsequent involvement in the juvenile justice system. Our sample is drawn from a population of young people (aged 10–17 years) adjudicated for sexual offences against women and children and referred for treatment between 2004 and 2018.

Aims and objectives

This project delves deeper than simply the presence or absence of ACEs; rather, it “zooms in” on the specific negative experiences of 20 youths adjudicated for sexual offences against women and children. We provide much more detail than the initial 10-item checklist and consider the onset, co-occurrence and temporal ordering of those experiences. We develop a technique to visualise the nature, extent and sequence of the ACEs in their lives.

Method

The broader project of which this report is part, “Adverse childhood experiences and the intergenerational transmission of domestic and family violence in young people who engage in harmful sexual behaviours and violence against women”, utilises a mixed methods approach. This research report is the first in a series that will address these gaps in knowledge and address future directions for research, policy and practice. This particular report concerns the qualitative component of a smaller sample with more detailed variables. The clinical files of more than 400 young people adjudicated for sexual offences were reviewed and coded according to the total known number of ACEs. Results were arranged in descending order, and the 20 cases with the highest ACE scores were selected and reviewed such that their ACEs could be plotted over time (at 12-month intervals) from birth until their assessment at the time they were referred for treatment. Finally, a visualisation technique – the ACE Matrix – was developed to account for and describe the temporal ordering of ACEs for these 20 youths. This visualisation builds upon the previously developed Life History Plot (Harris, 2013) and was constructed in consultation with a graphic designer and science communicator.

Results

The reported nature and extent of negative childhood experiences in our sample of male youths adjudicated for sexual offences was profound, not just in overall prevalence but also in duration and co-occurrence. While that prevalence is unsurprising given the bias of our sample, our results further revealed that participants’ childhoods were characterised by multiple and different types of maltreatment, household dysfunction, caregiver inconsistency and residential instability.

Our temporal analysis suggested frequent changes in both accommodation and primary caregiver, which was indicative of severely disrupted attachments. It was often the case that participants began their lives with at least one biological parent (usually, their mother), but that alternative carers usually appeared quite quickly. Grandparents were the most frequently cited caregivers and out-of-home placements were common. Our developmental visualisation technique

emphasised the striking concentration of abuse and neglect experienced in the first six years of life. The 20 ACE matrices provided in this report clearly illustrate that the maltreatment often occurred (and co-occurred) before the participants had started primary school.

ACEs tended to co-occur; consistent with previous research, our results suggest that experiencing one ACE puts one at a higher risk to experience other ACEs (Malvaso et al., 2021; Pammenter et al., 2022). Even in many cases where the total ACE score was not high, it was noted that the adversities that the youths were subjected to were constant and lasted many years.

Conclusions

We build upon the existing ACE checklist by using a dynamic approach to examine the developmental nature of maltreatment. Having a more thorough grasp of the onset and duration of ACEs and understanding the ways these experiences typically transpire will be valuable in our efforts to inform earlier and more effective intervention. We recommend two specific avenues for further research: revision of the ACE checklist, and adoption of a life course lens to better capture the causes and long-term consequences of ACEs, particularly regarding the role of these experiences in perpetuating cycles of abuse against women and children.

Introduction

Background

Extant literature compellingly demonstrates the prevalence among and impact of adverse childhood experiences (ACEs) on youths, who themselves become involved in the juvenile justice system (Evans et al., 2008; Malvaso et al., 2021). In recent years, researchers have drawn distinctions between the experiences of young people who engage in general offending compared with those who specifically engage in sexual aggression or problematic sexual behaviours (Levenson et al., 2015, 2016; Malvaso, Delfabbro, & Day, 2019). The latter category of offences disproportionately impacts women and children (Australian Bureau of Statistics, 2021) and is the focus of the present study. As our understanding of justice-involved young people continues to evolve, we now largely take for granted the suite of complex individual characteristics and the impact of cumulative trauma that often precede criminal and sexually aggressive behaviour, especially that which is directed towards women and children.

A growing body of literature has specifically examined the role of ACEs in the development of criminal behaviour and much of this work has examined adults who have engaged in offending behaviour (Levenson, 2016; Levenson & Socia, 2016; Levenson et al., 2015, 2016; Willis & Levenson, 2016), or youths arrested for non-sexual offences (Baglivio & Epps, 2016; Baglivio et al., 2016; Fox et al., 2015; Perez et al., 2018; Wolff & Baglivio, 2017). Collectively, these studies suggest that for some individuals, early adversity is associated with the development of future criminal behaviour (Felitti et al., 1998; Narramore et al., 2017; Reavis et al., 2013). Compared to participants with no or low ACEs, individuals who have experienced high levels of adverse life events during childhood are more likely to report involvement in crime in both adolescence and adulthood (Courtney & Maschi, 2013; Maschi et al., 2011). However, it is important to note that not all young people who experience adverse life events go on to engage in criminal behaviour and that, overall, there is substantial resilience among individuals experiencing these events (Leach et al., 2016). Indeed, being sexually abused in childhood has not been found to be a determinant of later sexual offending (Leach et al., 2016). Similarly, it is necessary to note that exposure to an adverse event might not constitute a traumatic experience (in the clinical sense

of the term). There is a complex interplay between the nature of an event and whether it is experienced as trauma that can be tempered by contextual variables such as attachment and social supports (Andrade et al., 2006).

Original ACE checklist

The original ACE checklist was motivated by a desire to understand why patients with apparently similar diagnoses, and who were prescribed similar treatments, experienced such different outcomes in their health and wellbeing (Felitti et al., 1998). The Centers for Disease Control and Prevention's (CDC) original study measured the presence or absence of 10 conditions within the first 18 years of life and concluded that different outcomes could be explained by the presence of childhood trauma and adversity. These conditions were arranged into three broad domains: 1) abuse (physical, emotional and sexual); 2) neglect (physical and emotional); and 3) household dysfunction (domestic violence, parental separation or divorce, and the presence of a mentally ill, substance-abusing or incarcerated household member) (CDC, 2019; Narramore et al., 2017).

Of course, any of these experiences alone is potentially detrimental and we now have the notion of cumulative trauma to describe the compounding effect of multiple ACEs (Anda et al., 2006). That is, it has been demonstrated that the accumulation of multiple and compounding ACEs is strongly associated with poor outcomes as opposed to the experience of specific adverse events. Numerous studies have shown that children exposed to cumulative harm are more likely to experience a severe range of adverse psychosocial and behavioural outcomes, including pronounced internalising and externalising behaviour disorders (Evans et al., 2008). Furthermore, the timing of these events matters, and a developmental perspective requires us to consider the age-graded nature of these events as well as change over time. For example, does sexual abuse occur on a single occasion or does it occur multiple times over a period of months or years? Or was a child subjected to a mentally ill and substance-abusing parent for several years who then left the family home and was no longer a concern? And finally,

was the parent incarcerated when the child was six or when the child was 16? How differently might the same event be experienced at such different ages and developmental stages?

It is beyond the scope of this report to examine the criminal career components in depth, so interested readers are directed elsewhere for a thorough review of the definitions of constructs such as frequency, duration, persistence and desistance as they relate to criminality (e.g. Blumstein et al., 1986; Piquero, 2000). In this report, we make a unique contribution to the literature by focusing exclusively on the known onset, offset and temporal ordering of reported ACEs. Rather than simply reporting that something was or was not experienced before one's 18th birthday, we code the following queries for each experience: When did it happen? When did it start? How long did it last? When did it stop? And what happened afterwards?

Rationale

Despite decades of research on the long-term consequences of child abuse and maltreatment, the bulk of our knowledge continues to be derived almost entirely from a now rather dated 10-item checklist (Felitti, et al., 1998) of dichotomous (never/ever) variables (Pammenter et al., 2022). This project aims to extend our understanding of childhood adversity by examining the timing, placement and temporal ordering of several early developmental experiences known to be empirically correlated with subsequent involvement in the juvenile justice system. Our sample is drawn from a population of young people (aged 10–17 years) adjudicated for sexual offences against women and children and referred for specialised treatment to address their sexual offending behaviour.

Aims and objectives

Given the preponderance of evidence suggesting the presence of ACEs, this project aims to delve deeper than previous research by “zooming in” on the specific experiences of a small sample of 20 youths adjudicated for sexual offences against women and children. First, we aim to provide much more detail than the initial 10-item checklist by reporting and examining the onset, frequency, co-occurrence and

temporal ordering of these experiences. Second, we created and introduced a technique to visualise the nature, extent and temporal ordering of the ACEs in their lives.

It is widely accepted that justice-involved populations tend to have higher ACE scores than comparative or control groups of community members (Malvaso, Delfabbro, & Day, 2019; Malvaso, Delfabbro, Day, & Nobes, 2019). It has also been alleged that certain combinations of ACEs might be found among perpetrators of some crimes compared to others (Levenson et al., 2016). For example, a recent comparative study of adolescents with sexual or nonsexual violent criminal records concluded that the youths adjudicated for sexual offences were more likely to have experienced hands-on abuse and other maltreatment (i.e. neglect), whereas the youths who had been charged for nonsexual violence were more likely to have experienced multiple forms of more general household dysfunction, including witnessing domestic and family violence (DFV; Pammenter et al., 2022).

Although this line of inquiry has value and sheds much light on the disrupted sociologies of our sample of interest, the 10-item “tick and flick” ACE checklist has recently been criticised for its oversimplification, bias and incomplete assessment of childhood adversity (Finkelhor et al., 2013; Malvaso et al., 2021; Pammenter et al., 2022). The present study seeks to advance the current state of our knowledge of the nature and extent of reported ACEs by applying a developmental lens and borrowing the theoretical approach from life course criminology. We attempt to disentangle time as a variable and consider patterns in onset, frequency, temporal ordering, persistence and change over time to explore whether these factors impact offending outcomes.

Cumulative adverse experiences

An understanding of cumulative trauma assumes that experiences do not occur in isolation and suggests that they often co-occur. However, less is known about whether there are distinct patterns in how specific adversities co-occur. For example, it is difficult to imagine that sexual abuse could be experienced in a vacuum devoid of any accompanying physical or emotional abuse. If one is subject to physical neglect and not having their caregiving needs met, it is possible that they are also at an elevated risk of

experiencing accompanying emotional neglect. Finally, if a child is raised by parents who struggle with substance abuse and are known to have diagnosable mental health concerns, perhaps it might follow that their physical and emotional needs will be neglected (Hornor, 2014; Neger & Prinz, 2015). These potential connections are yet to be fully explored, which is largely a result of the limited availability of appropriate and detailed information to inform these inquiries. Knowledge of what adversities tend to co-occur will have direct implications for the delivery of interventions (e.g. combining complementary strategies).

Temporal ordering

Knowing that things co-occur leads us to question what comes first and whether this has implications for later outcomes. Does experiencing something make someone more vulnerable to experiencing something else, or to experiencing that same or similar phenomenon on a subsequent occasion? In the current sample, the youths' reported ACEs preceded their offending, but it is also true that some ACEs occurred *after* their adjudication or involvement in the justice system (in particular, residential instability/out-of-home care/being removed from the home). It is important to know about and understand more than what happened, including the timing, ordering of events and whether other co-occurring events were present. This is because all these developmental dimensions could have implications for later outcomes and could inform the implementation of more effective and early intervention strategies to minimise subsequent poor outcomes.

The innovative approach of this research is significant because it attends to an important knowledge gap that stands to contribute to developmental criminology, psychology and child protection. Furthermore, the current work has the potential to inform practitioners working on the front lines (e.g. law enforcement and child protection services) to improve the safety of women and children. For example, findings from this project could lead to the identification of critical points for intervention, where improved timing for service provision may result in better outcomes for young people. Further, identification of specific patterns or trajectories of adverse experiences may assist in early identification of those most vulnerable individuals at greatest risk for the most negative life outcomes. We specifically recommend, for example,

that intervention be available for children who are known to have experienced ACEs prior to the age of six. Early and more effective intervention such as this could reduce the social and economic costs associated with sexual violence and abuse perpetrated by youths.

In summary, the most significant conceptual advancement this project delivers is moving beyond characterising ACEs as dichotomous and static variables (i.e. present/not present). We aimed to enhance the ACE framework by adding developmental dimensions to better understand the dynamic nature of these events, and how these elements impact later outcomes.

Methods

This report refers to the exploratory portion of a study that employed qualitative techniques to review the records of a small sample drawn from a larger quantitative analysis. We began with a quantitative exploration of more than 400 individuals and worked towards the creation of an individual ACE Matrix that visualises a sequence analysis for a selected subsample of 20 participants. Those 20 cases represented the top 5 per cent of the overall sample (by ACE scores) and well exceeded the recommended sample size of 12 participants that is generally accepted as sufficient to reach data saturation (Clarke & Braun, 2013). Each stage of the method is described in turn below, after a discussion of the study setting and ethical considerations for the project.

Study setting

The information for the project was derived from the clinical files maintained by the Griffith Youth Forensic Service (GYFS). GYFS is a specialised clinical forensic assessment, treatment and consultation service for youths who are adjudicated for serious sexual offences. Consistent with the risk–need–responsivity model (Bonta & Andrews, 2007), GYFS prioritises the assessment and treatment of those youths screened as representing the highest risk of reoffending and having the greatest treatment needs. As such, the GYFS client population is biased toward the most serious young offenders with substantial histories of ACEs. GYFS is a statewide service that has been operating in Queensland, Australia, since 2001, as a partnership between the Queensland Government Department of Children, Youth Justice and Multicultural Affairs (Youth Justice), and Griffith University. The GYFS treatment model is based on a theoretical framework and empirical research that integrates individual, ecological, and situational levels of explanation (see Smallbone & Cale, 2016; Smallbone et al., 2008). This framework promotes an understanding of each youth’s sexual offending within the context of their development, natural ecosystem and the immediate offence environment. All clients undergo a comprehensive assessment process prior to the delivery of treatment, which results in detailed information about each young person’s developmental history and potential ACEs. This information forms the basis of the qualitative analyses in this report, with the cases featured having been referred to GYFS between 2004 and 2018.

The GYFS treatment model incorporates three core components in the delivery of services: 1) a field-based focus; 2) individualised multisystemic assessment and treatment intervention; and 3) collaborative partnerships (for more detail, see Allard et al., 2015). A repertoire of evidence-based therapeutic interventions and approaches, drawing primarily from cognitive-behavioural and relapse-prevention strategies (e.g. Ryan et al., 2010), are utilised to address client-specific treatment goals within the program. Offence-specific assessment and the delivery of treatment interventions are overseen by registered psychologists.

Overall ACE scores

Participants and data source

The initial sample consisted entirely of male youth¹ referred to GYFS for assessment and potential treatment for the commission of a sexual offence. Participants ranged in age from 10 to 17 years,² with a mean age of 14.5 years at the time of current offence. Two fifths (41%) of the sample identified as Indigenous. We note that this percentage indicates that Indigenous youths were overrepresented in our data, compared to their overall representation in the general population of the state. The overrepresentation of Indigenous Australians in the current sample is consistent with their level of overrepresentation in the Queensland juvenile justice system more broadly. We acknowledge that criminal justice system overrepresentation is largely explained through systematic racism and the cumulative impacts of intergenerational trauma and colonisation and is certainly not indicative of an inherent differential in criminal propensity. We honour the truths provided in the *Warawarni-gu Guma Statement* (ANROWS, 2019) and have no intention to compare participants based on ethnicity. We observe that this reality invites caution in the interpretation of our findings.

1 Due to the very small number of female participants (n=5) in the original group of more than 400 individuals, only male clients were included in this study.

2 Eighteen-year-olds were only included for the cases that were referred after 2017, consistent with changes in Queensland state legislation (where the age of adolescence increased from 17 to 18 years).

Measures

Much of what is known about the impact of cumulative experiences of childhood trauma comes from the original ACE checklist (Felitti, et al., 1998; CDC, 2019). The study that generated the initial checklist examined the childhood experiences of over 17,000 adults using a 10-item ACE scale to determine the impact on later health outcomes and behaviours. That scale measured the presence or absence of 10 conditions reported to occur within the first 18 years of life (CDC, 2019). These conditions are arranged into three broad domains: 1) abuse (physical, emotional and sexual); 2) neglect (physical and emotional); and 3) household dysfunction (domestic violence, parental separation, and the presence of a mentally ill, substance-abusing or incarcerated household member; CDC, 2019). An individual's final ACE score is a total count (out of 10) of the number of different types of adverse experiences observed or reported (Naramore et al., 2017) prior to age 18. The original CDC definition and current operationalisation of each ACE (from the GYFS dataset) is provided in Table 1 below. Due to reporting differences and the way information was recorded in the present dataset, we necessarily note the more inclusive definition of "neglect" in our coding dictionary. Due to the way the previously coded dataset was developed, we ultimately collapsed physical neglect and emotional neglect into one category ("neglect"). While unfortunate, this was an unavoidable limitation of using an existing dataset, but we have confirmed elsewhere (Pammenter et al., 2022) that combining these two kinds of neglect did not alter our results significantly. Thus, the final ACE score for the present sample was calculated out of nine, rather than 10.

Table 1: Adverse childhood experiences (ACEs) item descriptions (original and current study)

Original checklist	Original description	Current item and label in ACE Matrix	GYFS description
ACE 1 Emotional abuse	Did a parent or other adult in the household often swear at you, insult you, put you down or humiliate you? OR act in a way that made you afraid that you might be physically hurt?	Emotional maltreatment "Emo A"	Psychological denigration and failure to provide a child with adequate emotional availability and nurturance that are likely to have a negative impact on the child's self-esteem or social competence. For example, adult refuses to acknowledge the child's worth and the legitimacy of the child's needs (rejection); isolating the child, terrorising the child; or ignoring the child
ACE 2 Physical abuse	Did a parent or other adult in the household often push, grab, slap or throw something at you? OR ever hit you so hard that you had marks or were injured?	Physical abuse "Phys A"	The non-accidental use of physical force against a child by a person who is in a position of trust and caretaking at the time (e.g. parent, older sibling, other relative, caregiver) and that results in harm to the child. Includes shoving, hitting, slapping, shaking, throwing, punching, kicking, biting, burning, strangling and poisoning
ACE 3 Sexual abuse	Did a person or adult at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way? OR try to or actually have oral, anal or vaginal sex with you?	Sexual abuse "Sex A"	Victim of hands-on sexual assault (sexual touching, sexual assault with or without violence)
ACE 4 Emotional neglect	Did you often feel that no-one in your family loved you or thought you were important or special? OR your family didn't look out for each other, feel close to each other, or support each other?	Neglect "Neglect"	Failure by parent or caregiver to provide a child (where they are in a position to do so) with the conditions that are culturally accepted as being essential for their physical and emotional development and wellbeing. As indicated in at least one of the following types of neglect: <i>physical</i> - failure to provide basic physical necessities such as safe, clean and adequate clothing, housing, food and healthcare; <i>emotional</i> - lack of caregiver warmth, nurturance, encouragement and support; <i>educational</i> - failure to provide appropriate educational opportunities for the child; <i>environmental</i> - failure to ensure environmental safety, opportunities and resources. Lack of involvement in child's day-to-day activities
ACE 5 Physical neglect	Did you often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? OR your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	-	-

Original checklist	Original description	Current item and label in ACE Matrix	GYFS description
ACE 6 Parental separation or divorce	Were your parents ever separated or divorced?	Single parent living environment "Separ"	Living in a single parent environment
ACE 7 Exposure to domestic violence	Was your mother or step-mother often pushed, grabbed, slapped, or had something thrown at her? OR sometimes or often kicked, bitten, hit with a fist, or hit with something hard? OR ever repeatedly hit over at least a few minutes or threatened with a gun or knife?	Witnessing family violence "DFV" Caregiver is a victim of domestic violence	Witnessing of verbal, physical or sexual violence toward another family member with whom the child has a significant relationship (including extended family and guardians). This may include direct (visual) and indirect (auditory) exposure to physical assaults on family members Caregiver has been a victim of domestic violence during the young person's developmental years
ACE 8 Family member substance abuse	Did you live with anyone who was a problem drinker or an alcoholic or who used street drugs?	Caregiver has a substance abuse or dependence problem "Subst"	A maladaptive pattern of substance use leading to clinically significant impairment or distress (e.g. unable to fulfil major role obligations at work, school or home [neglect of children or household], absent from work); driving car while intoxicated; disorderly conduct; interpersonal problems exacerbated by effects of the substance (e.g. arguments with spouse about consequences of intoxication, physical fights)
ACE 9 Family member mental health	Was a household member depressed or mentally ill or did a household member attempt suicide?	Caregiver has history of mental health problems "MH"	Caregiver has a formal history of mental illness (as previously defined)
ACE 10 Family incarceration	Did a household member go to prison?	Incarceration "Incarc"	Maternal, paternal or sibling involvement in crime; criminal records; periods of incarceration; parent or step-parent or older siblings have a positive attitude towards anti-social (and criminal) behaviour; maternal, paternal or older sibling have a history of sexual offending behaviour

Procedure

We began by reviewing the available clinical files of each participant to calculate their ACE scores. As is standard for clinical service delivery in a forensic context, GYFS maintains detailed clinical archives for the clients they serve, which contain comprehensive information about their developmental histories, including their exposure to ACEs. All credible information (including but not limited to clinical evaluations, self-reported information collected during interviews, police holdings, court records and psychological assessments) was reviewed and used to score each case. Each participant's total ACE score (0–9) was computed, along with a range of other variables of interest.

Visualisation of high ACE scores

Participants and data source

The present subsample of 20 participants was drawn from the larger sample of more than 400. All referred and treated clients were sorted, with their total ACE scores arranged in descending order. The 20 cases with the highest total ACE scores were selected. This approach was consistent with life course criminology and the criminal career research paradigm (Blumstein et al., 1986; LeBlanc & Frechette, 1989), and followed Patton's (2002) "extreme or deviant case" sampling strategy (p. 242). Although measuring constructs such as onset, frequency, duration and persistence introduces bias, it is necessary to draw upon those cases with elevated ACE scores and who have sufficiently comprehensive records from which to extract that level of detail. For example, if a client's ACE score is 1 or 2, and their experience of each kind of abuse was an isolated occurrence, then measures of frequency and duration have no relevance. For this reason, we selected only those cases with the highest cumulative ACE scores and evidence of repetition of experiences. Once we arranged the cases in descending order by ACE score, we selected the first 20 participants with complete files and sufficient information from which to code all variables of interest.

More than half (55%; $n=11$) of the participants selected for this project were Anglo-Australian/Caucasian and the remaining

45% ($n=9$) were Indigenous. The participants ranged in age from 12 to 18 at the time of their referral to GYFS, with an average age of 16.01 years ($SD=1.39$).

Measures

The visualisation part of the study used nine of the original 10 ACE checklist items (with "physical neglect" and "emotional neglect" combined into one measure of "neglect", as described above). Participants were coded according to the presence or absence of each of those nine ACE checklist items that were known to have occurred at any time prior to their referral (in 12-month intervals). As explained in further detail below, two additional constructs were included for the data visualisation: caregiver inconsistency and residential instability.

Caregiver inconsistency was included as a variable (row) to the top of each person's ACE Matrix ("CG inco"). As with the original ACE items used in this study, caregiver inconsistency was coded dichotomously at each 12-month interval. Endorsing the item indicated that there was credible evidence in the archival files of a transition in primary caregiver during that year. The measure was intended to create an impression of the number of different adults responsible for the primary care of the participants over time. We note that in some cases, a child's primary caregiver would change many more times than once a year, or that a child might switch back and forth between parents or kin. Although the conclusions we can draw regarding exact frequency are limited, we make an important contribution by using a year (12 months) as the unit of analysis.

Residential instability was indicated by progressively darker shading across the entire matrix. Four response options were available, and we employed a hierarchical approach to their classification. First, columns that contained no shading indicated that during that 12-month period, the young person was living in a home with his family of origin (usually at least one biological parent). Kinship care is included in the first column. Second, light grey shading represented an out-of-home placement, such as foster care. The third option of medium grey shading signified residential care or crisis accommodation (including staying in a shelter and periods

of transience – e.g. “couch surfing”). Finally, fully shaded columns indicated that at some point during that year, the youth was held in custody (either on remand or serving a sentence). Homelessness was originally intended to be its own category, but no one in the sample reported experiencing homelessness, so it was ultimately removed.

Using the hierarchical approach for the “residential instability” variable meant that only one response could be entered for each year, and so it represented the most troubling living circumstance that the young person had experienced during that 12-month period. In other words, if over the course of one year a child had lived at home with both parents for a few months, was in residential care for a few weeks, returned home for a few more months, and then was held in custody for a few weeks, that year would be represented as “custody” (100% shading).

We began with the intent to include changes in primary caregiver, total number of different caregivers and residential instability (including out-of-home placements). Numerous components went into the final construction of this variable. We considered the location of the child, noting any reported changes in residential address. We also considered changes in the people providing the child’s primary care, noting reported changes in guardianship. We combined each of these measures into a global item intended to measure change that was disruptive or especially negative.³ Because we needed to strike a balance between simplicity and detail, we ultimately could not include everything.

³ We note that a stable nuclear family who moves to a different house will not inherently constitute an adverse experience. We also note that a change in primary caregiver (for example, a step-parent moving out, a grandparent moving in, or a child going to live with their aunt) also does not inherently constitute an adverse experience. We hope instead to advance the field somewhat by simply considering the number of transitions in residential and caregiver combinations without imposing any judgement on their composition. We further acknowledge that there is no universal way of accounting for positive and negative caregiving arrangements. Indeed, one of the lingering limitations of the original ACE checklist is its assumption that parental separation is always, and can only be, adverse. For example, other developmental theorists have previously observed that if a divorce frees a child from an abusive parent, then parental separation might create a positive transition for the child. These and other considerations made during the visualisation process are described in more detail in the “Discussion” section of this paper.

Procedure

An ACE Matrix was developed to include the coding above and to account for and describe the temporal ordering of the ACEs that were identified to be present or absent at each time gate. This visualisation technique built upon the lessons learned during the construction of the Life History Plot (Harris, 2013; Harris & Harris, 2021). As detailed in the “Results” section below, one matrix was created for each individual, with one ACE appearing per row, over time (one year per column; refer to Figures 2–6 and Appendix B).

The archival clinical files of the 20 cases with the highest ACE scores were reviewed and recoded so that the presence or absence of each individual ACE could be plotted over time. For example, rather than “physical abuse” being a dichotomised never/ever variable that spanned 18 years, a value (0/1) was entered for each year of the adolescent’s life (up to 18 years). This approach was used to denote whether the file contained any credible information of physical abuse occurring in each specific 12-month period. Two trained research assistants coded and scored the files under the supervision and training of the CI (chief investigator; first author). The files were reviewed and coded between May and September 2021, and relevant data were simultaneously entered into a primary spreadsheet from which exploratory descriptive statistics were generated.

Given the sensitive nature of the information contained in the files, and to ensure that the experience of vicarious trauma by the research team was minimised, all data collection, extraction and entry was conducted in a cooperative manner, in an open-plan office. The research assistants and remaining team members met regularly for debriefing sessions and to discuss inter-rater reliability. Client files were generated prior to the creation of the specific objectives for this study, so occasional confusion arose regarding some specific variable definitions. Any discrepancies were discussed until consensus was reached. By the end of the data collection period, all 20 files had been read and coded by both research assistants and the CI had read and coded 10 files to ensure consistency across measures.

Ethical considerations

This project relied solely on the perusal of secondary data collected as part of a previous Australian Research Council (ARC) Discovery Project completed by GYFS – the “Youth sexual violence and abuse” project (DP110102126). Given the use of previously collected and de-identified data, no direct contact with participants was required. Thus, all processes satisfied the requirements of Griffith University’s Human Research Ethics Council and the protocol was exempt from ethical review (GU ref no: 2021/639).

The ethical considerations relevant in a study of a vulnerable population such as the current one go beyond those required to access a de-identified spreadsheet. The handling of all files by GYFS staff and clinical assistants is bound by the ethical guidelines established by and articulated in the *APS Code of Ethics* (Australian Psychological Society Limited, 2010). Since its inception in 2001, GYFS has ensured that all existing protocols relating to informed consent for client research participation are completed at the commencement of contact. Before assessment begins, clients are informed of the possibility that their de-identified personal history, offence and treatment participation information may be used for research purposes and reported at an aggregate level. At this time, clients can opt out of having their redacted file information available for future research.

This study exclusively utilised previously collected secondary data such that no individuals were involved directly as participants in the research. All data reviewed by the research team were de-identified, thereby ensuring participant anonymity. Additional measures were taken in some instances where some specific cases were excluded from consideration due to sensitivities and the potential of inadvertent identification of individuals and/or their families.

The research team is acutely aware that secondary data regarding Aboriginal and Torres Strait Islanders can be analysed without due attention to its colonising potential (Smith, 2021). In acknowledgement of this concern and to limit this potential, the research was also consistent with Griffith University ethics protocols for research involving

Indigenous people. The research was conducted according to the Australian Institute of Aboriginal and Torres Strait Islander Studies’ guidelines for conducting research with Indigenous people, and adhered to the ethical standards detailed in the Aboriginal Health and Medical Research Council Ethics approval process. Finally, cultural advisors were consulted frequently during project design and throughout the analysis and interpretation of results to ensure cultural sensitivity in the conduct of the research and interpretation of findings.

Results

In this section we present our findings from the overall ACE scores and our visualisation of the temporal ordering of those ACEs as they were reported in the files of 20 participants. Reviewing the findings, a clear picture of concurrent adversities emerged. The number of individual ACEs reported, the cumulative counts recorded for each participant *and* the overall average ACE score for our sample (when compared to other samples of youths adjudicated for sexual offences; YASOs) were all substantially higher than those reported in previous studies (Levenson, et al., 2016; Malvaso, et al., 2019a; Pammenter et al., 2022). We have provided a brief overview of these data in Appendix A to situate the current study's subsample and to contextualise those individuals described in more depth below. Next, we introduce the ACE Matrix. In the interest of space, we include a representative selection of five ACE Matrices as figures below with accompanying narrative descriptions of these cases. The remaining 15 ACE Matrices are provided in Appendix B.

Due to our purposely selected sample, the overall ACE scores for the cases in the Matrixes were unsurprisingly high, with a mean of 8.0 (range 6–9). Taken together, 60 per cent (n=12) of these participants had officially recorded criminal offences prior to their index offence and more than half of the sample (55%, n=11) had received a custodial sentence (the remaining participants received probation). Almost every participant's file (90%, n=18) included official notifications made to a statutory child protection agency and of the 12 for whom we had a count of specific notifications, the average was 15.7 (range 4–55). Three quarters of participants (75%, n=15) had experienced at least one period in out-of-home placement before their twelfth birthday.

After providing a key (Figure 1) to assist the reader to understand the various components of the visualisation and to explain how to “read” the plot, we present a single ACE Matrix (Figure 2), before continuing on to the next four (Figures 3–6).

Figure 1: ACE Matrix key

	Living with at least one biological parent or kinship care
	Foster care
	Residential care, crisis accommodation, shelter, transient
	Custody
●	Presence of ACE in 12-month period

Case A

Figure 2: ACE Matrix for Case A

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco							●	●	●	●	●	●	●	●	●	●	●	●
Emo A							●											
Phys A							●					●		●		●		
Sex A						●												
Neglect	●	●	●	●	●	●	●			●	●							
DFV										●	●							
Subst	●	●	●	●	●	●	●								●	●		
MH	●	●	●	●	●	●	●											
Separ							●											
Incarc							●									●		

Figure 2 presents the first ACE Matrix (Case A) of the study. This section explains how to read the ACE Matrix (according to the key in Figure 1). A detailed description of Case A's story follows.

The matrix contains 10 rows and 17 columns. Each column represents a 12-month period in the young person's life and each row represents a specific ACE. The first row depicts caregiver inconsistency ("CG inco") and is endorsed with a black circle if there was credible evidence in his file of more than two changes in caregiver in that given year. The next nine rows all correspond to a specific ACE, as outlined and defined in Table 1. (Note that the original ACE checklist items of "physical neglect" and "emotional neglect" were ultimately collapsed for the present study, due to the inclusive nature of our "neglect" measure.)

The cells are shaded in columns to indicate periods of residential instability each year. A range of living circumstances are possible, but as per the key in Figure 1, we have simplified those living arrangements into four options: "family of origin", "foster care", "residential care" and "custody". For example, as can be seen in Figure 2 (ACE Matrix for Case A), Case A lived with his family of origin until moving to kinship care at the age of seven.

Case A was 16 years old when he was referred to GYFS for treatment following one count of rape and two counts

of indecent treatment of a child under 12. He served four months in detention for those convictions, followed by a 12-month probation order. His officially recorded criminal history began three years prior to the sexual offence, with a range of property-related offences (including theft and wilful damage). A review of his entry in the ARC dataset revealed the highest possible ACE score of 9 (i.e. had been subject to each ACE by the age of 18 years). The visualisation allows us to "zoom in" and examine the onset, duration and temporal ordering of these adversities.

Examination of the ACE Matrix demonstrated that Case A's childhood and adolescence was marked by multiple transitions in accommodation and in caregivers, and that his experience of adversity was concentrated in the earliest years of his life. He lived with his biological parents until the age of six, when his father went to jail for the first time. At this time, unable to care for her children alone, his mother put her sons in the care of her sister (their maternal aunt).

Both of his parents suffered acute mental health concerns and engaged in significant substance abuse during the time he lived with them. His file indicates that he was exposed to opiates in utero and that when he was three years old, his brother was born methadone dependent. There was also evidence of sexual abuse by a family friend at the age of five. He moved into foster care at seven, following a string of substantiated notifications of neglect, witnessing family

violence, and physical abuse by his mother, father, aunt, and aunt’s partner. During the years he was in and out of foster homes, he occasionally returned to live under his mother’s or aunt’s care, but only long enough for child protection to again be notified for allegations of physical abuse and neglect by his female relatives as well as exposure to family violence and substance abuse.

During his adolescence, he was placed in at least five different residential care homes and was held in custody on at least three occasions in mid-adolescence – first, for the sexual offences mentioned above, and subsequently for contraventions of his bail conditions. Overall, starting in utero, Case A experienced multiple and cascading ACEs that both overlapped and changed over time, appearing to be strongly linked to changes in caregivers and living circumstances. This case illustrates the dynamic temporal nature of ACEs that are strongly tied to caregiving and residential features.

Case B

Figure 3: ACE Matrix for Case B

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco											●		●	●	●	●	●	●
Emo A								●	●	●	●	●	●	●	●			
Phys A								●	●	●	●	●	●	●	●			
Sex A											●	●	●					
Neglect								●	●	●	●	●	●	●	●			
DFV								●	●	●	●	●	●	●				
Subst	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
MH																		
Separ					●													
Incarc												●	●	●				

Case B was one of five siblings. His file indicates that his parents separated when he was four, and he first lived with his mother until he was 10, before moving to the care of his father for a brief period, until his father was incarcerated a year later. He was the victim of a series of sexual assaults while in his father’s care, resulting in Child Safety intervention. His record documents that he threatened suicide at the age of 12,

and at around the same time was placed in multiple foster families and group homes before returning to his mother’s care, which is where his offences occurred. His offences included two counts of sexual abuse that occurred when he was 14. After these offences were detected, he was required to move out of his mother’s house, placed in residential care, and ultimately sentenced to six years of detention.

Case B’s overall ACE score was 8, with most of these adverse events densely concentrated in the years immediately before puberty. Prior to this period, the only ACE was his mother’s substance abuse. His record indicates multiple instances of abuse and neglect, including excessive physical discipline and inadequate food and clothing. At the age of nine, he was referred to a counselling and support service for treatment of childhood trauma. Unlike some of the other cases, he

experienced a decade of stable caregiving, residing only with his mother. His residential mobility and caregiver inconsistency only commenced after he was removed from his father’s care. Case B’s case demonstrates that ACEs can often be concentrated to specific living environments, and that an inadvertent outcome of Child Safety intervention is often disruption of the living circumstances and caregiver stability.

Case C

Figure 4: ACE Matrix for Case C

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco							●						●	●	●	●	●	●
Emo A				●							●	●	●	●	●			
Phys A				●	●	●	●	●	●	●	●	●	●	●				
Sex A															●	●		
Neglect				●			●	●	●	●	●	●	●	●				
DFV																		
Subst						●	●	●	●	●	●	●						
MH																		
Separ										●								
Incarc																		

Case C’s overall ACE score was 6. Although he is on the low end of the distribution of this particular group of young people with high ACEs, the matrix shows that those six ACEs began very early (in particular, abuse beginning at age three) and that he endured prolonged exposure to a variety of adversities. Case C’s file includes 18 known notifications to child protection for multiple instances of substantiated emotional and physical harm, including sustaining severe physical injuries. Reflecting his prolonged and intensive

exposure to trauma, he reported suicidal ideation as early as 11 and reported being sexually abused by caregivers on at least two occasions. His contact with the youth justice system commenced when he was 12 years old, at which time he experienced his first placement in residential care, followed by several different out-of-home placements. By the time he was referred to GYFS at 17 years, he had accrued 10 arrests and two previous custodial sentences relating to a variety of offences. He exhibited a versatile criminal history,

including property offending, violence, sexual offending and technical violations of youth justice orders (e.g. breach of community supervision).

Case D

Figure 5: ACE Matrix for Case D

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco										●				●		●		
Emo A			●		●			●			●		●					
Phys A			●		●			●					●					
Sex A								●						●				
Neglect				●	●	●	●	●	●	●	●							
DFV										●								
Subst																		
MH																		
Separ									●									
Incarc																		

Case D had four siblings and was raised by both of his biological parents until they separated when he was eight. Those eight years of stability in caregivers were punctuated by 19 child protection notifications (mostly for physical and emotional abuse and neglect perpetrated by his parents). A two-year child protection order began when he was nine and was subsequently extended for two years. In addition to the official notifications relating to physical and emotional neglect, he also described how he and his siblings spent large amounts of time with an adult male who was known

to have been convicted for sexual offences against children. After continued substantiated child protection concerns, he was placed in foster care, living with at least three different families. While living in the kinship care of the third family, he raped a 10-year-old female (a relative of his carer) and, following conviction, was referred to GYFS.

Case E

Figure 6: ACE Matrix for Case E

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco	●	●	●	●	●													
Emo A	●	●	●	●	●													
Phys A	●	●	●	●	●													
Sex A											●							
Neglect	●	●	●	●	●													
DFV	●	●	●	●	●													
Subst	●			●														
MH	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
Separ																		
Incarc																		

Case E spent the early years of his life moving back and forth between his mother and father, with these years being marked by exposure to domestic violence. His file indicates at least 16 transitions between his parents before his third birthday, including a stay in a domestic violence shelter with his mother when he was one. At four, he was informally placed by police in the care of his paternal grandparents due to multiple substantiated child protection notifications of abuse and neglect by his parents. These notifications related to physical harm due to neglect, such as being left unsupervised, lacking food, wearing dirty clothes, smelling of urine and receiving inadequate medical care. As he progressed through childhood and adolescence, he was suspended from school multiple times, showed poor engagement in school and exhibited extremely disruptive behaviour. His involvement with youth justice began at the age of 13, with a property

offence, at which time his grandparents relinquished their care and he was placed in residential care. He lived in multiple residential care facilities during his teenage years and was referred to GYFS at age 15 for multiple sexual offences against his half-brother that occurred during family visits.

Discussion

In this study, we conducted a detailed qualitative analysis of the ACEs experienced by a sample of 20 youths who had been adjudicated for sexual offences against women and children. Access to detailed clinical information allowed us to examine the temporal and interacting nature and extent of ACEs that has not been possible in previous research. The development and application of a visualisation technique demonstrated the dynamic nature of ACEs in these young people's lives and points a way forward for improving the ACE framework to better understand key turning points for early intervention to prevent the cycle of abuse. The findings can be summarised under three main areas: 1) the extent of ACEs experienced by youth; 2) the co-occurrence of ACEs; and 3) the dynamic nature of ACEs over time. Each of these findings is discussed in detail below.

Extent of ACEs

Based on the traditional method of examining ACEs (i.e. summed score of the total number of different ACEs reported prior to age 18), the GYFS clients were characterised by adversity. For example, the average ACE score (out of 10) from the CDC's (2019) original study was 1.4 for adult patients with medical insurance presenting at an emergency room in a southern state of the United States. By comparison, Levenson et al.'s (2016) Florida study of juveniles with sexual offence convictions revealed an average ACE score of 2.7. Although we note that it is not directly comparable, the mean score for the global sample of GYFS clients (n=277) was 3.90. The average ACE score for the cases presented in the ACE matrices above was 8.0 (out of 9). Given the priorities of the service from which the sample was derived (i.e. emphasis on high-risk/high-need youths with the most serious offences), it appears reasonable to suggest a connection between the intensity of ACEs and the seriousness of offending.

Across the majority of GYFS cases that were examined in detail, a key theme emerged of the importance of early onset ACEs. The young people in our sample experienced the greatest concentration of adverse events in early to mid-childhood. Such an early onset of adversity might set the foundation for behavioural and emotional difficulties to emerge as the young people enter adolescence. It could follow that those early experiences continue to exert their impact through the life

course and contribute to lived experiences marked by complex trauma. To be sure, further research is required to confirm such a suggestion, and subsequent study is recommended in this area. Our findings lend further weight to the importance of preventative and/or early intervention approaches, such as family-based intervention and the promotion of positive parenting skills and wellbeing. The clinical files for youths who had experienced concentrated early onset ACEs often documented intervention efforts to address their traumatic experiences, which, left untreated, would typically act as a barrier to therapeutic engagement for offence-specific interventions. In terms of clinical implications at a tertiary intervention level, the findings emphasise the importance of parallel support for the sequelae of ACEs and the risk of perpetrating harm.

The intersection between exposure to gender-based violence and other ACEs such as neglect and parental separation must be considered by service responses. There is a concern that interventions will be administered by multiple agencies without consideration of how adverse events co-occur and they may increase the risk of youths experiencing other adverse events. This study shows multiple levels of system engagement with child protection and domestic violence service sectors, illuminating the potential opportunities to engage these children as victims to avert further harm. These results provide a broader implication for domestic violence, child protection, education and family services to engage with early intervention and justice responses before vulnerability to offending can manifest, rather than purely leaving outcomes to chance, especially when considering the time between events.

Co-occurrence of ACEs

In this study, ACEs tended to co-occur; consistent with previous research (Malvaso et al., 2019a), our quantitative results suggest that experiencing one ACE puts one at an exponentially higher risk to experience other ACEs (Pammenter et al., 2022). Rarely did an individual's file contain a single incident of abuse or neglect. For example, even among those cases with multiple ACEs, if a participant was known to have been physically abused, it was seldom the case that the abuse had occurred only once. Instead,

their exposure to that abuse was often frequent, repeated and long lasting. Although not reflected in the matrices, we also regularly observed abuse occurring at the hands of multiple perpetrators. If child protection notifications indicated allegations of neglect, it was rarely the case that the allegation was an isolated incident.

Given the selection of cases with the highest ACEs, it is not surprising that the sample was characterised by co-occurring difficulties. We acknowledge that our results may be unique to those most serious/high-risk cases, and that ACE histories may look different for youths with less serious offending. We believe these results demonstrate the cyclical nature of abuse, whereby some youths growing up in developmental contexts characterised by adverse events will behave in a way that reflects these traumas externally. Again, it is necessary to note that most children are resilient and do not externalise their trauma in this way (Finkelhor et al., 2013).

Consistent with the overall theme in our findings, exposure to DFV tended to co-occur with multiple other ACEs. Given this overlap and the qualitative focus on a small sample, it was difficult to ascribe any unique or specific effects of exposure to DFV on later offending outcomes. Questions relating to the specificity of DFV exposure to subsequent offending outcomes require a much larger sample of youths and will be addressed in the final report for this project.

The co-occurrence of ACEs reflects the complexity that characterises the lives of youths who perpetrate sexual violence and abuse against women and children. Addressing complex trauma is often a key aspect of intervention delivered by GYFS, emphasising the importance of trauma-informed care approaches. From a clinical practice perspective, unaddressed trauma can act as a barrier to engagement in interventions. This highlights the importance for practitioners working with young perpetrators to be competent in balancing approaches that support victimisation experiences while also addressing perpetration of harm.

ACEs change over time

Most importantly, our results highlight the dynamic nature of ACEs over time, which reveals the shortcomings of

viewing ACEs from a static perspective or using a single cumulative score to account for the complex lives of youths who perpetrate sexual violence and abuse. The addition of caregiver and residential stability information to the visualisation plots demonstrates that ACEs are closely bound to living environments, with the presence or absence of ACEs tied to transitions in these environments. Many of those in our sample began their lives with at least one biological parent (usually their mother), but alternative carers often appeared in the family home within a few years of the child's birth. Consistent with other examinations of child safety, grandparents were the most frequently cited caregivers, but the overall picture was one of frequent flux in parental figures. Out-of-home placements were not uncommon. For the several participants who served custodial sentences, the visualisation of accommodation and living arrangements supported the use of residential care only as a last resort.

As noted above, our developmental visualisation technique highlighted the striking concentration of abuse and neglect experienced in the first six years of life for youths who have perpetrated sexual violence and abuse against women or children. In the visualisations provided above, it can be clearly seen that the greatest concentration of experiences of abuse and neglect often occurred before the participants had started primary school. This finding underscores the value of directing early supports towards pre-primary-school-aged children.

The visualisations further illustrated that, in general, the presence and frequency of ACEs appeared to decrease as the participants aged. It could be that ACEs decreased over time because of increasingly intensive intervention strategies and system involvement (e.g. child protection, youth justice and health systems). In most cases, it appeared that ACEs declined as youths were removed from living environments where abusive experiences occurred. However, there are several other potential explanations for the observed decline in ACEs. First, it is possible that the nature of ACEs changed over time, with the original framework not capturing these changing ACEs. It is highly possible that ACEs are age-graded, where the framework used for the current study was good at identifying ACEs in childhood but did not capture ACEs more likely to be experienced by adolescents (e.g. peer victimisation, exposure to community and peer violence).

Second, it is possible that ACEs became more difficult to detect as youths aged, possibly due to a reluctance to report abuse perpetrated by family, for example. Third, it is possible that the observed decline of ACEs into adolescence is specific to the current sample and not representative of the broader population of youths who perpetrate sexual violence and abuse. It is possible that ACEs concentrated in childhood is characteristic only of those most concerning and high-risk youths who perpetrate sexual violence and abuse. These possibilities remain to be further explored.

Strengths of the project

This life course approach allows for a richer understanding of a person's childhood than traditional cross-sectional-level data currently allow. Here we can see the nature and extent of adverse experiences over time by examining the appearance and onset, repetition, ordering, removal and reappearance of each type of adversity as individuals progress through the life course.

The use of clinical data allowed for a consideration of how ACES change over time. An important asset of this study has come from the careful consideration of variable time gates and how to best represent developmental periods. The original ACE checklist contained never/ever variables that were coded once and covered any point prior to one's 18th birthday. Our initial ARC dataset contained details about ACEs that were coded dichotomously during two time periods: during childhood (prior to age 12) and during adolescence (after age 12). In our preliminary quantitative analysis, we noted no statistically significant differences between those time gates. Essentially, if someone experienced abuse prior to age 12, this abuse was likely to continue after age 12. From the perspective of reliability across time, this indicated consistency in our measurements. As we began to design the individual ACEs Matrices, however, an exploratory examination of a handful of cases with high ACE scores revealed considerable change (and often marked adversity) in the earliest years of a child's life. To capture this observation and determine whether those findings were statistically significant and/or clinically meaningful, we were motivated to continue with the more granular life history calendar approach of plotting the ACEs over 12-month periods between birth and age 18.

Limitations of the project

The current findings should be interpreted in context of the limitations of this study. Although we contribute to the forward movement of the field by considering the sequence and ordering of events, our matrices remain, at best, an "artist's impression" of the true nature and extent of adversities experienced by our participants. Those in our sample have led remarkably complex and complicated lives, which are difficult to capture meaningfully in a standardised format. Our visualisations should only be used as a "starting point" in understanding and organising the lived experiences of justice-involved youth.

Similarly, the nature and extent of residential mobility in the sample means that living situations and caregiver circumstances can rarely be represented with accuracy using a single character or shaded cell. To be sure, while it is striking to see a person's life punctuated by a series of at least yearly transitions in primary caregiver, or that he has been in custody at all, we know anecdotally that some of the black dots or shaded cells in the ACE Matrix represent many more placements and transitions than implied. Faced with no useful way to account for caregiver change in a way that also plots ACEs, however, we consider that our approach, while incomplete, contributes by creating an overall image of that inconsistency and change. Although the limitations of ACEs in capturing frequency and severity remain, our work is a step in the right direction.

We purposefully selected a small sample of high-risk/high-need individuals with particularly serious sexual offence histories. Therefore, we necessarily acknowledge our inability to generalise to broader samples of adolescents, or even to other samples of young people with comparable juvenile convictions. This method, while imperfect, certainly serves to illustrate the point that ACEs are dynamic and are best explored in a temporal fashion.

Directions for future research

We recommend two specific avenues for further research: revision of the ACE checklist, and the adoption of a developmental and life course lens to better capture the

causes and long-term consequences of ACEs. We consider each in turn.

Our findings have revealed several shortcomings of the original ACE checklist. In particular, and consistent with recent critiques of the tool, we note that it is incomplete. We have contributed to the evolution of the tool by inserting measures of residential instability (including out-of-home placements) and caregiver inconsistency. In addition, we recommend consideration of several other items for inclusion. These include (but are not limited to): 1) sexually explicit material (i.e. inappropriate or premature exposure or access; possession and distribution or creation); 2) impact of peer relationships (e.g. negative peer relationships, bullying, association with antisocial peers or loneliness and isolation); and 3) educational instability (e.g. attendance at multiple schools, chronic truancy, suspensions or expulsions).

We recommend a reconsideration of the inherent gender bias in the DFV item that specifies women/mothers as the target of male-perpetrated intimate partner violence. Consistent with our evolving understanding of the nuances of DFV, we recommend this item become gender inclusive and encompass (either eye- or ear-) witnessing of any kind of violence between or against any caregiver or family member. We also recommend that the gender of both parties be noted to enable later analysis by gender.

Another element that is missing from the existing ACE checklist but is necessary to consider is the age-graded nature of ACEs. The age-graded nature of childhood experiences is a key component of developmental and life course criminology and suggests that we consider the differential impact of the same event occurring at different ages. For example, parental incarceration will be experienced differently at the age of two and the age of 14. One might have a clearer recollection of a parent being in prison and missing their seventh birthday compared to missing their second birthday, for example. The same experience might worsen as one ages, because their awareness grows, and their attachments are more developed.

Alternatively, the negative impact of the experience might be mitigated by the time one is 15 (compared with when they

are eight) because they have developed coping skills and resilience and have other support networks, such as peer groups, outside the family, and perhaps rely on their parents less for everyday attachment needs. The subtle but potentially very meaningful nuances that emerge when we look at the data in this way is deserving of further investigation.

Having a more thorough grasp of the onset and duration of adverse experiences and understanding the ways in which those experiences typically transpire will doubtlessly be valuable in our efforts to inform earlier and more effective intervention. Filling this knowledge gap will help to identify places and points in time where intervention might be best implemented to be most effective. This is especially important when considering child rights to be protected at critical points, particularly where there is evidence of cumulative adverse events and trauma. Situating our results within a child rights perspective is critical for policy and practice.

An important paradox of these results is, of course, that multiple ACEs do not necessarily predispose someone to engage in antisocial behaviour as they mature. We certainly cannot speculate on why some children who experience early ACEs or many ACEs do *not* go on to experience poor outcomes and perpetrate sexual violence and abuse against others. Similarly, we also lack a thorough understanding of why some people who commit those behaviours appear to have little or no histories of adversity. These questions are the subject of ongoing study and their answers will provide much-needed knowledge generation regarding resilience, wellbeing and prevention of abuse. We also note that our results are limited to understanding the experiences of boys and men who engage in sexual violence and abuse of women and children. It is therefore necessary to situate our research within this gendered framework.

Our results have implications for the work that occurs in the tertiary intervention space. First, practitioners need to be skilled in trauma management in order to fully incorporate trauma-informed approaches into their treatment. Second, the experience of childhood adversity itself might act as a barrier to therapeutic engagement, and the related consequences should be taken into consideration. Third, involving multiple people at

multiple levels of different agencies, while necessary, requires better communication and integration of complementary services for young people. This will enable the earlier and more effective disruption of the child-safety-to-youth-justice “pipeline”.

Our results suggest that the accumulation of ACEs rather than the experience of specific ACEs could be used to better determine certain offending outcomes. This is linked to the idea that ACEs tend to co-occur. Therefore, future research should address whether there are specific patterns in what ACEs co-occur. Relatedly, if patterns are observed, does experiencing a certain ACE make one especially vulnerable to the experience of another?

Finally, visualising data in this way can be a useful tool for the exploratory stage of data analysis, but also for practitioners in conducting assessments, collecting information, and conceptualising the nature and extent of maltreatment. For example, the act of constructing the matrix provides a framework for analysing and synthesising what are often complex, extensive and detailed case files. Making the plots helps identify data gaps and suggests specific further information that might be valuable in understanding an individual’s development. Once a plot is made, the contours of a client’s childhood can be rapidly assessed. Clinicians can quickly gain an overview of a client’s history and could employ the plots as a tool when working with the participants themselves. It might be useful from a fact-finding perspective to get the dates (years) of events and other data correct, but it could also be a valuable therapeutic tool. It also allows a clinician or researcher to be able to ask, “What was going on at this time in your life?” or to reflect on the cumulative impact of various experiences (Harris & Harris, 2021).

The application of a developmental perspective to understand the temporal nature of ACEs is an important contribution of this project. Rather than a simple number out of 10 to indicate the cumulative presence of ACEs, the visualisation technique we developed has permitted the observation of onset, duration, co-occurrence and temporal ordering of those experiences in a single graphic. It is here that we recommend further research attention be directed. Applying

a longitudinal focus to the study of childhood adversity has clear benefits. Understanding the long-term consequences of cumulative trauma and disadvantage necessitates a multi-disciplinary lens. We provide that approach here by adopting perspectives from developmental criminology, psychology and social work.

Conclusion

The available literature on the influence of ACEs on juvenile sexual offending lacks a contemporary and nuanced understanding of the sequences and concentration of events. Moreover, evidence is needed about critical points in ACEs that may avert further harm and vulnerability to offending. Results from this research offer some beginning points to better illuminate these complexities. This research report is the first in a series that will address these gaps in knowledge and address future directions for research, policy and practice.

This study presents a sequential analysis of ACEs over time and introduces a data visualisation tool to examine the onset, duration and temporal ordering of those adversities experienced throughout one's childhood and adolescence. We draw upon the complex lives of 20 male youths who were adjudicated as juveniles and referred for treatment for the commission of a serious sexual offence. Our results revealed frequent changes in accommodation and primary caregiver and a striking concentration of abuse and neglect before the participants had started primary school. Exposure to DFV featured in most cases. Understanding its co-occurrence with other events is an important focus for further inquiry. Here the context of gender roles and masculinity is an important lens for further interpretation. It was often the case that participants began their lives with at least one biological parent (usually their mother), but that alternative carers usually appeared quite quickly. Grandparents were the most frequently cited caregivers and out-of-home placements were common. Childhood adversities also tended to co-occur. The upbringing of those in our sample was marked by considerable residential instability and caregiver inconsistency as well as by severely disrupted attachments. Here the violation of child rights and cumulative trauma was not lost on us as researchers.

We make a significant contribution to the field by using a dynamic approach to build upon the existing ACEs framework to examine the developmental nature of maltreatment. Having a more thorough grasp of the onset and duration of ACEs and understanding the ways those experiences typically transpire will be valuable in our efforts to inform earlier and more effective intervention. We recommend two specific avenues for further research: revision of the ACE

checklist, and adoption of a developmental and life course lens to better capture the causes and long-term consequences of ACEs, particularly regarding the role of these experiences in perpetuating cycles of abuse against women and children.

Author contributions

DH: First draft and revisions, selection of cases, oversight of research assistants, identification of variables, creation of data visualisation tool, project management.

JO: Second draft, consultation on analysis, consultation on visualisation, clinical considerations, explanations, conclusions (and will co-lead the second report).

LT: Technical assistance, creation of initial database, extraction of cases of interest, management of research assistants, managing data entry, inter-rater reliability, troubleshooting, ethics procedures, ensuring method is appropriate, project management.

JB: Review of drafts, consultation re: data collection and analysis/data custodian (and will co-lead the second report).

JR: Cultural consultation, overall project management/oversight, liaise with stakeholders.

POL: Project oversight, final work on report and consultation.

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APPENDIX A:

Overview of original and comparative ACEs

The average ACE score (out of 10) from the Centers for Disease Control and Prevention's (2019) original (1994–1999) study was 1.4 for adult patients with medical insurance presenting at an emergency room in a southern state of the United States. By comparison, Levenson et al.'s (2016) Florida study of juveniles with sexual offence convictions revealed an average ACE score of 2.7. The corresponding mean score for the present situating sample of GYFS clients was 3.90.

A cumulative ACE score of 4+ is generally accepted to be the threshold for a “high score”. Less than 10 per cent of the CDC's participants met that threshold (9.2%) compared with approximately one third (32.1%) of Levenson et al.'s Florida

youth (2016). In comparison, the files of more than half of the GYFS sample (54.1%) contained credible evidence for the presence of at least four ACEs prior to their referral. Our results further revealed that participants' childhoods were often characterised by multiple and different types of abuse, neglect, maltreatment, dysfunctional families, caregiver inconsistency and residential instability. The table below presents the percentage of young people in two comparable samples who endorsed the presence of each ACE. The first group is “youths adjudicated for sexual offences and referred to GYFS” (YASO). The comparison group included almost as many youths from the same jurisdiction who were adjudicated for “nonsexual violence” and processed through youth justice (YANSV).

Table A1: Comparison of individual ACE items for youths adjudicated for sexual offences (YASO) and youths adjudicated for nonsexual violent offences (YANSV)

	YASOs (n=277) % (n)	YANSVs (n=100) % (n)	χ^2 (df=1)	p
Emotional abuse***	46.5 (128)	17.0 (17)	26.993	<0.001
Physical abuse*	50.0 (138)	36.0 (36)	5.787	0.016
Sexual abuse***	28.0 (77)	3.0 (3)	27.311	<0.001
Neglect***	48.4 (133)	17.0 (17)	29.484	<0.001
Parental divorce**	55.6 (154)	71.0 (71)	7.246	0.007
Domestic violence	61.0 (164)	51.0 (51)	2.978	0.084
Substance abuse	51.1 (134)	52.0 (52)	0.021	0.884
Mental health**	31.5 (82)	18.0 (18)	6.598	0.010
Familial incarceration***	24.3 (65)	75.0 (75)	80.823	<0.001

* $p < .05$, ** $p < .01$, *** $p < .001$

APPENDIX B:

Fifteen remaining ACE Matrices not presented as case studies

Figure B1: ACE Matrix for Case F

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco		●	●									●	●			●	●	●
Emo A																		
Phys A						●	●					●						
Sex A										●	●	●						
Neglect	●	●	●	●	●	●	●	●	●									
DFV												●						
Subst	●	●	●	●	●	●	●	●	●			●						
MH			●	●	●	●	●	●	●	●	●	●						
Separ		●																
Incarc												●	●			●		

Figure B2: ACE Matrix for Case G

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CG inco					●		●	●	●	●	●		●	●	●
Emo A			●	●	●		●	●		●				●	
Phys A			●	●	●		●	●		●				●	
Sex A															
Neglect				●			●	●							
DFV										●					
Subst								●	●	●					
MH															
Separ															
Incarc															

Figure B3: ACE Matrix for Case H

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco						●					●	●	●	●	●	●	●	●
Emo A																		
Phys A	●	●	●	●	●	●		●										
Sex A				●				●										
Neglect	●	●	●	●	●	●	●	●	●	●	●	●						
DFV	●	●	●	●	●	●												
Subst	●	●	●	●	●	●	●	●		●	●	●	●	●				
MH															●			
Separ		●																
Incarc									●	●	●	●	●	●	●	●	●	●

Figure B4: ACE Matrix for Case I

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco						●	●	●	●	●	●	●	●	●	●	●	●	●
Emo A				●			●	●	●	●								
Phys A																		
Sex A						●	●	●	●	●		●						
Neglect				●	●		●	●	●	●	●							
DFV	●	●	●	●	●							●						
Subst						●	●	●				●						
MH																		
Separ						●												
Incarc																		

Figure B5: ACE Matrix for Case J

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco	●	●	●	●			●	●	●	●		●		●	●	●	●	●
Emo A				●	●	●	●				●		●			●		
Phys A					●	●	●	●	●	●	●	●	●			●		
Sex A						●									●	●		
Neglect					●	●	●	●	●	●	●	●	●	●	●	●		
DFV							●	●	●	●	●	●	●	●				
Subst							●	●	●	●	●	●	●	●				
MH																		
Separ							●											
Incarc				●			●				●					●		

Figure B6: ACE Matrix for Case K

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco						●	●			●			●	●	●	●	●	●
Emo A									●	●	●	●	●					
Phys A						●	●	●	●	●			●	●	●			
Sex A							●	●		●	●							
Neglect				●	●	●	●	●	●	●	●	●	●					
DFV				●	●	●	●	●	●	●		●	●					
Subst	●	●	●	●	●	●	●	●	●	●	●	●	●					
MH																		
Separ							●											
Incarc																		

Figure B7: ACE Matrix for Case L

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco					●					●					●	●	●	●
Emo A								●										
Phys A					●	●	●	●	●	●								
Sex A						●		●										
Neglect			●			●	●	●	●			●	●	●				
DFV			●	●	●	●	●	●	●	●				●				
Subst					●	●	●	●	●	●								
MH																		
Separ																		
Incarc											●		●					

Figure B8: ACE Matrix for Case M

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco	●					●	●	●					●	●	●	●	●	
Emo A		●				●	●		●	●	●	●						
Phys A		●	●	●			●	●	●	●		●	●					
Sex A												●	●					
Neglect		●	●	●		●	●	●	●	●		●	●					
DFV	●				●	●		●	●									
Subst				●				●	●				●					
MH																		
Separ	●																	
Incarc																		

Figure B9: ACE Matrix for Case N

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco			●	●							●	●	●					
Emo A									●									
Phys A									●	●				●				
Sex A			●															
Neglect					●	●			●									
DFV	●	●	●															
Subst								●	●	●	●							
MH																		
Separ			●						●									
Incarc								●		●								●

Figure B10: ACE Matrix for Case O

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco							●	●	●									●
Emo A				●	●	●												
Phys A				●	●	●												
Sex A						●												
Neglect				●	●	●	●											
DFV																		
Subst																		
MH							●											
Separ											●							
Incarc									●	●	●	●	●	●				

Figure B11: ACE Matrix for Case P

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco	●			●	●		●	●		●	●			●	●	●	●	●
Emo A												●			●			
Phys A				●	●		●	●	●			●		●	●			
Sex A																		
Neglect			●	●	●					●	●	●		●	●	●		
DFV								●	●									
Subst		●	●	●													●	
MH																		
Separ		●																
Incarc																		

Figure B12: ACE Matrix for Case Q

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco														●	●	●	●	●
Emo A																		
Phys A		●	●	●	●	●	●	●	●	●	●	●	●					
Sex A					●	●	●	●	●	●	●	●	●					
Neglect	●	●	●	●	●	●	●	●	●	●	●	●	●					
DFV																		
Subst	●	●	●	●	●	●	●	●	●	●	●	●	●					
MH																		
Separ	●																	
Incarc																		

Figure B13: ACE Matrix for Case R

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CG inco				●	●	●	●	●		●	●	●	●	●	●
Emo A			●		●	●									
Phys A	●	●	●		●	●	●	●	●	●					
Sex A						●	●	●	●						
Neglect	●	●	●	●	●	●	●								
DFV	●	●	●	●	●	●	●								
Subst	●	●	●	●	●	●	●								
MH	●	●	●	●	●	●	●								
Separ															
Incarc															

Figure B14: ACE Matrix for Case S

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CG inco						●					●			●	●	●
Emo A				●	●			●	●					●	●	
Phys A				●				●	●				●			
Sex A													●			
Neglect				●		●		●	●	●			●		●	●
DFV				●												
Subst							●	●								
MH				●			●									
Separ						●										
Incarc																

Figure B15: ACE Matrix for Case T

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CG inco						●	●		●		●							
Emo A																		
Phys A																		
Sex A							●	●	●	●								
Neglect	●	●	●	●	●	●												
DFV									●									
Subst	●	●	●	●	●	●												
MH	●	●	●	●	●	●												
Separ						●												
Incarc																		

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