Investigating Exposure to Community Violence and Associated Internalizing and Externalising Behaviours in a Sample of South African Male Youth

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COMPULSORY DECLARATION

This work has not been previously submitted in the whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or the works, of other people has been attributed, and has been cited and referenced.

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Abstract

Exposure to community violence has been acknowledged as a public health problem, affecting individuals' mental well-being and health. Community violence refers to incidents of violence which take place within an individual's community or outside an individual's home. Research exploring the behavioural and emotional outcomes of exposure to community violence has suggested that youth with high levels of exposure to community violence may exhibit adverse emotional and behavioural outcomes. Although there is a large body of literature exploring exposure to community violence, there is a dearth of South African (SA) literature looking at exposure to community violence in terms of being a victim, witness or perpetrator of community violence and the associated outcomes. Existing research does not consider the impact of community violence on all three levels (and especially so with regards to perpetration of violence) in relation to internalizing and externalizing behaviours and callous-unemotional traits in male youth, thus presenting an area for research inquiry.

Using a cross-sectional, quantitative design, the current study investigated exposure to community violence and its three subcategories, namely, witness, victim or perpetrator and the associated callous-unemotional traits, internalising and externalising behaviours in a sample of SA male youth (N =108) through a range of self-report measures (Alcohol Use Disorders Identification Test; Alcohol, Smoking, and Substance Involvement Screening Test; Beck Depression Inventory-Second Edition; Child Behaviour Checklist Youth Self-Report; Child Exposure to Community Violence Checklist; Inventory of Callous-Unemotional Traits; Maudsley Addiction Profile and Reactive-Proactive Aggression Questionnaire). Results indicated that not all three subcategories of exposure to community violence were significant predictors of the outcome variables. The results of the regression analyses showed: exposure to community violence and its three subcategories as significant predictors of the externalizing behaviour syndrome grouping, and of depressive symptoms and withdrawn/depressed symptoms in terms of internalising behaviours; exposure to community violence and being a witness and victim of violence as significant predictors of the internalizing behaviour syndrome grouping, and anxious/depressed symptoms and somatic complaints within this grouping; exposure to community violence and being a victim and perpetrator of violence as significant predictors of aggression and reactive aggression (externalising behaviours); exposure to community violence as a perpetrator as a significant predictor of proactive aggression (externalising behaviour); and

exposure to community violence and being a witness and perpetrator of violence as significant predictors of rule breaking behaviour (externalising behaviour), with significance rates ranging from $p < .05$ to $p < .001$. Notably, callous-unemotional traits were not significantly correlated to any study variables.

The current study is largely aligned with existing research and how both internalizing and externalizing behaviours may co-occur in relation to the three levels of exposure to community violence. Further research on callous-unemotional traits in relation to community violence is needed. As community violence occurs in various contexts understanding the associated adverse outcomes at all three levels of exposure may assist the development of interventions and policy initiatives which can prevent further experiences of victimization and perpetration of community violence by male youth.

Keywords: exposure to community violence; internalizing behaviour; externalizing behaviour; callous-unemotional traits; South Africa.

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Introduction

Exposure to community violence, defined as direct experiences of threats of bodily harm or as witnessing another individual experiencing harm in one's community, has been acknowledged as a public health problem (World Health Organization [WHO], 2014; Wright et al., 2017). Certain demographic and socioeconomic factors appear to predispose some individuals more than others, in terms of both direct and indirect risk, to community violence. For example, males and individuals from socially and economically disadvantaged communities are reportedly at greater risk of experiencing and witnessing community violence (Kersten et al., 2017; Mkhize et al., 2012; Nöthling et al., 2019; Otwombe et al., 2015; Sommer et al., 2017). Furthermore, children younger than 18 years are commonly affected by violence in their community and are likely to be exposed to violence within their home, neighbourhood and/or school (Mrug et al., 2008; Wright et al., 2013).

Exposure to community violence can negatively impact youth's health, behavioural development and impact mental well-being by affecting emotion regulation capacities (Copeland-Linder et al., 2010; Myers et al., 2018; Rosario et al., 2008; WHO, 2014; Wright et al., 2017). Consequently, exposure to community violence increases the risk of exhibiting callous-unemotional traits, internalizing behaviours, such as depressive symptoms and suicidality, and externalizing behaviours, such as offending behaviour and aggression (Bradshaw et al., 2009; Copeland-Linder et al., 2010; Dembo et al., 2007; Wright et al., 2013). When looking specifically at youth's exposure to violence in their community in South Africa (SA), the risk of negative behavioural outcomes are increased due to SA's high rates of violence and crime (Bhorat et al., 2017; Cheteni et al., 2018; Sui et al., 2018). Consequently, high rates of crime and violence can result in youth being exposed to violence as a witness and/or victim and can result in youth themselves being involved in the manifestation of such violence through perpetrating crimes, such as vandalism, physical assault, or theft (Blakemore et al., 2018; De Wet et al., 2018; Kaminer, du Plessis, Hardy, Benjamin, 2013; Widom et al., 2015). Research findings suggest that exposure to violence when one is a child and/or adolescent may predispose one to partake in violence and crime later in life and one may see this progression through the transition from being a witness or victim of violence, to perpetrating violence against others (De Wet et al., 2018; Widom et al., 2015).

Literature Review

Risk Factors that Predispose Youth to Exposure to Violence, including Community Violence

Crime in SA

Research shows that the impact of violence is significant in low- and middle-income countries (LMIC; de Ribera et al., 2019; Matzopoulos et al., 2008). SA, previously classified as a LMIC, is reported as having high rates of violence and crime (Brankovic, 2019; De Wet et al., 2018; Statistics South Africa [Statistics SA], 2018c). For instance, during the period 2012-2013, the prevalence rates of homicides in SA were 31.1 murders per 100 000 and 344.6 violent bodily assaults per 100 000, often committed by males who were younger than 25 years old (Souverein et al., 2016). Further, in 2017, the homicide rate in SA had increased to a rate of 34.1 per 100 000, suggesting that incidences of homicide and violent crime are high (Brankovic, 2019; South African Police Service [SAPS], 2017). For the period April 2016 to March 2017, homicide, sexual and physical assault, and armed robbery, made up 42% of all crimes reported in SA (SAPS, 2017). In line with this epidemiological evidence, the rates of interpersonal violence in SA have previously been postulated to be about 5 times higher than the global average (Kaminer & Eagle, 2010).

It is worth noting that criminal activity, such as home robberies, made up 71% of crimes reported to SAPS in the Western Cape between the 2016/17 to 2017/18 period (Statistics SA, 2018c). When looking at crime figures specifically in Cape Town, during 2016/17, approximately 890 cases of criminal activity were reported on a daily basis to SAPS (City of Cape Town, 2018). Additionally, in Cape Town, the crime rate was 7930 per 100 000 compared to the rest of SA, which was approximately 3906 per 100 000 during 2016/17 (City of Cape Town, 2018). As Cape Town's crime rate is higher than the national crime rate, one can argue that Cape Town remains a hotspot for violence and crime which may occur within the home, school or community (City of Cape Town, 2018). This is consistent with previous research which suggests that in SA criminal activities are concentrated within big cities such as Johannesburg, Durban and Cape Town (Armstrong et al., 2008; De Wet et al., 2018; Jean-Claude, 2014). That being said, this may suggest a higher risk of exposure to both direct and/or indirect violence and crime which may frequently occur within an individual's home, school or community, and these experiences can be further exacerbated by socioeconomic deprivation.

Socioeconomic Deprivation and Crime in SA. Poverty, and socioeconomic deprivation generally, is a global multi-faceted social issue which impacts the lives of adults, adolescents, and children. Poverty, from a perspective that accounts for both economic and social disadvantage, can be understood as affecting both an individual's socioeconomic position and their subjective psychological experience of poverty, which may affect an individual's sense of social belonging (Ajuruchukwu & Sanelise, 2016; Engle & Black, 2008).

Further, there is a well-established correlation between crime and socioeconomic status (SES) and associated factors, such as poverty, however the understanding and interpretation of this correlation is contested (Lee, 2000; Pare & Felson, 2014; Pratt & Cullen, 2005). This dispute can be partially explained by the fact that crime can result from various factors which are not only associated with poverty, such as drug use, and because poverty is understood to be multidimensional (Cheteni et al., 2019). While this dispute does exist, most scholars are of the assumption that the risks of engaging in criminal behaviours are increased when one is subjected to poverty (Dong et al., 2020; Imran et al., 2018; Pare & Felson, 2014; van der Merwe et al., 2012).

Socioeconomic deprivation in SA is one of the long-term consequences of the apartheid system and a manifestation of political and structural violence which had programs and policies in place that privileged one social group to the detriment of other social groups (Harris & Vermaak, 2015; Swartz & Scott, 2014). The apartheid system targeted individuals based on racial identity, directly affecting their access to beneficial resources leading to an unequal distribution of income, resources and wealth. Consequently, criminal activity with the aim of alleviating socioeconomic deprivation and a lack of resources, since being prevalent within the affected communities, can be argued as a direct effect of the apartheid system (Dhamija, 2020; Leoschut, 2008; Mosavel et al., 2015; van der Merwe et al., 2012). Often, individuals within these communities may not have access to basic needs including sanitation, housing, clean drinking water or electricity, and may turn to crime in order to access these basic needs (Ramphoma, 2014). For example, individuals in these communities experience deficits in service delivery, and may engage in actions such as protests, looting of stores, and have confrontations with law enforcement agents such as SAPS in retaliation of these deficits (Alexander, 2010). Protest violence can also intersect with various other forms of violence and may be considered a violent reaction to wealth and structural inequalities (Alexander, 2010; Bowman et al., 2015).

Moreover, a lack of government support in low SES communities is likely to exacerbate experiences of crime and violence for community members. Some sociological theories posit that individuals who live in poverty and experience socioeconomic deprivation are at a higher risk of engaging in criminal behaviours due to experiences of discrimination and are hindered from accessing legitimate opportunities, such as employment prospects (Agnew, 1999; Pare & Felson, 2014). Arguably, such inequalities can be considered as drivers of crime and violence (Brankovic, 2019).

This unequal distribution of resources and wealth has had a ripple effect within SA society post-apartheid as criminal activity remains a social challenge with individuals living in fear of either becoming or already having been, a victim of crime (Jean-Claude, 2014). The consequence of crime has an extensive impact which can range from damage or loss of one's personal property to physical assault and in some cases, death, and these acts of crime may be perpetrated by fellow community members (De Wet et al., 2018). Research suggests that in contexts where there are substantial inequalities, particularly in terms of economic inequality, socioeconomic factors such as poverty, in combination with family vulnerability, increased levels of school dropouts and low-quality education, have been framed as key in understanding why youth are likely to drift towards violence, gang membership and crime (Ward et al., 2012). Consequently, SA communities, which are often diverse and reflect the country's socioeconomic inequalities also reflect significant differences concerning levels of violence exposure across communities (Savahl et al., 2013). That being said, incidents of violence should be further understood in terms various risk factors which may combine in various ways in different contexts which perpetuates violence, economic and social inequalities, and access to guns and alcohol are some of the factors that pose the most significant risk to exposure to community violence (Bowman et al., 2015; Brankovic, 2019).

Community Violence

Definition of Community and Community Violence

Researchers have highlighted the inconsistencies in the operationalization of the term 'community' across studies; often, 'community' is viewed as synonymous with the term neighbourhood (Guterman et al., 2000). Few studies have included qualifiers or descriptions of community; however, most studies do not explicitly define community in the study description (Trickett et al., 2003). Within the context of the current study, the term community can be

understood as youth's immediate environment which includes the home, school, and community/neighbourhood environment, in which youth have daily interactions (Hertler et al., 2018).

Community violence is defined as instances of violence, such as muggings, gang-related robberies, or death, and in some cases homicide, that transpires in one's community or outside one's home (Krug et al., 2002; Voisin & Berringer, 2015). Community violence can be perpetrated by individuals who are unrelated and may or may not be acquainted (Brankovic, 2019; Krug et al., 2002; Mkhize et al., 2012; Voisin & Berringer, 2015).

Research often describes community violence as having two subcategories, namely: witnessing violence and victimization (Voisin et al., 2016). Witnessing violence is defined as seeing and/or hearing of events of victimization, while victimization is understood as an individual being deliberately harmed by another individual or individuals through physical attack or theft (Fowler et al., 2009; Voisin et al., 2016). Notably, a third category of community violence exists, namely perpetration of violence against others, which may involve attempted murder, involvement in gang fights and/or sexually or physically assaulting other individuals (Brady et al., 2008; DeGruy et al., 2012; Gorman-Smith et al., 2004).

Previous SA studies (e.g., du Plessis et al., 2015; Nöthling et al., 2019; Otwombe et al., 2015; Shields et al., 2009a; Stansfeld et al., 2017; Sui et al., 2018; Ward et al., 2001) looking at exposure to violence have found that the community is often a site where individuals witness, experience or at times perpetrate violence. Further, crime statistics indicate that 47.7% of experiences of crime often occurred in the streets of residential areas (Statistics SA, 2018c). Arguably, experiences of witnessing violence and victimization commonly occurs for some youth in their community, which can negatively influence their behaviour and may lead to some youth becoming perpetrators of crime (Kersten et al., 2017).

On the other hand, it is worth noting that the WHO typology specifies two sub-categories of interpersonal violence namely, community violence and family and intimate partner violence (IPV); the latter which can be described as violence that may often occur between one's family members and/or intimate partners that may not always but often does occur within the home (WHO, 2002). Research postulates that victims of IPV may experience emotional, sexual, physical and/or financial abuse and that IPV may be used as a method to gain control over and harm one's partner and/or ex-partners (Adams et al., 2008; Bancroft et al., 2011; Loxton et al.,

2013). Arguably, there are differences in the experiences of community violence and family and IPV as the latter includes instances of economic abuse and the use of control tactics.

Moreover, in comparison to community violence, during incidents of IPV, family members such as parents, siblings and in-laws are often present (Bassadien & Hochfeld, 2005; Ryan & Roman, 2019). Further, research in the field of IPV has continuously researched women as the potential victim of violence as men are perceived to be the potential perpetrator, and this potentially positions women as the intended victim and men as perpetrators of IPV(Chiesa et al., 2018).

Previous research suggests that IPV may lead to adverse outcomes including anxiety, depression and post-traumatic stress disorder (Clements et al., 2021). Outcomes such as increased anxiety experienced by parents are exacerbated when their children are used as a control tactic during incidents of abuse as the parent experiences fear for the well-being and safety of their child (Clements et al., 2021). In contrast, exposure to community violence has been associated with internalizing and externalizing behaviours and callous-unemotional traits in youth (Davis et al., 2015; Evans et al., 2008; Fowler et al., 2009; Hanish & Guerra, 2002; Janosz et al., 2008; Mkhize et al., 2012; Mrug & Windle, 2010; Richards et al., 2004). Consequently, the nature and effect of community violence and family and IPV can be perceived as differing as the latter involves those who are known and close to children and further involves the victimization of the child's parent often by another family member.

Forms of Exposure to Community Violence Experienced by Youth

As noted, community violence can be experienced through witnessing, being a victim of, and perpetrating violence. I discuss each of these forms through which youth may experience or perpetrate community violence, below.

Youth as Witnesses

SA's rates of violence and crime amongst youth is exceedingly high and increases the likelihood of SA youth witnessing these events (Swartz & Scott, 2014). This is indicative in the results of two SA community studies, which found that 93% of youth between the ages of 12 to 15 years old (Kaminer, du Plessis, Hardy, et al., 2013), and 81% of high school youth aged 12 to 20 years (Collings et al., 2014), reported being exposed to more than two different types of violence. Further, in an unpublished Masters dissertation which explored the association between developing psychopathology and community violence exposure in the Western Cape, with a

sample male and female youth between the ages of 13 to 19 years, findings suggest that 72% of the sample witnessed another individual being physically beaten (Ngidi, 2010). Results from a longitudinal study conducted in the Gauteng Province indicated that witnessing another individual being attacked or hearing the sounds of gunshots was reported by two-thirds of school aged children, and further indicated that the figure increased in adolescence and early adulthood (Richter et al., 2018).

Additionally, as there is a high prevalence of gang violence in SA communities, youth's exposure to community violence involving the use of weapons or death of another individual is also reportedly high (Pinnock, 2016; du Plessis et al., 2015). For instance, previous community-based studies in SA found that between 40% and 89% of youth had witnessed another individual being stabbed and had been exposed to murder within their community and between 12% and 30% of youth who experienced community violence had been threatened with a weapon (du Plessis et al., 2015; Kaminer, du Plessis, Hardy, et al., 2013; Kaminer, Hardy, Heath, et al., 2013; Shields et al., 2008).

When looking at exposure to violence in various contexts, a previous SA study conducted by Shields et al. (2009b) with primary school youth, between the ages of 8 to 13 years, reported witnessing violence at school and in the community, with hitting (91.5% and 92.4%, respectively) and kicking/shoving (82.8% and 91.1%, respectively) being some of the most common occurrences reported. Notably, Shields et al.'s (2009b) findings further suggest that witnessing school violence occurred less frequently in comparison to witnessing community violence, suggesting that some youth may be both witnesses and victims of violence not only in their community, but in other immediate social spaces too.

Youth as Victims

Victimization of youth often occurs daily within their community, school or home (Clark, 2012; Mkhize et al., 2012; Leoschut, 2008; Sui et al., 2020). In a community violence study conducted in Johannesburg, 36% of male participants aged 16 to 18 years reported being victimized within their community; however, the study did not report on types of victimization (Otwombe et al., 2015). Moreover, the findings of an unpublished Masters qualitative study, carried out in Cape Town with 14 participants aged 14 to 15 years, indicated that being a victim of theft, burglaries and robberies were the most commonly reported experiences of victimization (Isaacs, 2010). Research showed that 96% of adolescents between the ages of 14 to 16 years

reported experiences of victimization including physical beatings by their mother; researchers postulate that experiences of victimization are particularly high during adolescence (Richter et al., 2018; Willman, 2019). A study in Cape Town provides further evidence for youth victimization and found that 88% of participants reported being kicked and/or shoved as the most common form of victimization they experienced in their community (Shields et al., 2009a; Shields et al., 2009b). However, rates of victimization may not be a true reflection of violence against youth as there are issues of underreporting, suggesting that rates of victimization are estimated to be higher (Hsiao et al., 2018).

Underreporting of crimes is a worldwide occurrence and SA is no exception (Bott et al., 2012; Casey et al., 2011; Palermo et al., 2014). A SA community violence study indicated that 80% of experiences of victimization were not reported to the appropriate authorities and identified potential factors contributing to underreporting, namely, unsupportive responses and reactions from one's primary caregiver(s) (Mkhize et al., 2012). Additional factors that play a role in the underreporting of experiences of victimization include the potential experience of embarrassment for the victim; the victim may not come forward if they were engaging in illegal activities such as drug use when the incident occurred, or if the victim wants to protect the perpetrator (Rennison et al., 2011). Youth may not report violence they have experienced as a result of fear of retribution from the perpetrator (Lepore & Kliewer, 2013). Another potential explanation for the underreporting of crime is the perception of police as not being able to help or that police would not do anything when victims report a crime (Statistics SA, 2018b). However, while some youth are victims of crime, other youth may be both victims and perpetrators of community violence and crime (De Wet et al., 2018; Kaminer, du Plessis, Hardy, et al., 2013; Leoschut, 2009; Sui et al., 2020). Research postulates that youth who are victims of violence can become perpetrators of such violence later and thus continue the cycle of violence (Bowman et al., 2015; du Plessis et al., 2015).

Youth as Perpetrators

Youth may perpetrate violence against others through various methods, such as physically attacking an individual to obtain material items or money and by using intimidation strategies, including using a weapon or gun when making threats of violence (Herrman & Silverstein, 2012; Spencer et al., 2009). In SA during 2016, it is reported that approximately 11 697 youth younger than 15 years of age were perpetrators of a crime (Statistics SA, 2018a).

Exposure to school and home violence may create an environment in which there are numerous opportunities for youth to learn violent behaviours (Leoschut, 2008; Souverein et al., 2016), and may in turn foster a culture perpetrating violence against others. This narrative is further supported as SA's historical, social, and contextual factors have fostered conditions which provide youth with opportunities to model and engage in violent behaviour (Kennedy et al., 2017; Souverein et al., 2016). Further, youth who perpetrate violence may experience an increased risk of exposure to violence in various contexts such as their community, home, or school, as these contexts can act as sites for violence and crime and may overburden youth's resilience threshold to overcome these experiences of violence, due to regular exposure to violence over time (Finkelhor et al., 2007; Mrug et al., 2008; Wright et al., 2013). Consequently, violence is viewed as acceptable, and may be used as a method to resolve conflicts with others and may lead to youth becoming perpetrators of violence themselves (Leoschut, 2009). Research suggests trends in demographic and SES-related factors as these factors are present across a range of forms of exposure to violence (Matzopoulos et al., 2008).

Demographic Factors Related to Exposure to Community Violence

Socioeconomic Status (SES)

SA research exploring the effects of community violence in relation to youth (see Appendix A) tend to have samples from low SES communities, usually characterized by poor living conditions and/or low-income employment (Donenberg et al., 2020; Flannery et al., 2004; Kaminer, du Plessis, Hardy, et al., 2013; Mrug & Windle, 2010; Mkhize et al., 2012; Otwombe et al., 2015; Shields et al., 2008; Shields et al., 2009a; Shields et al., 2009b). One possible explanation for the seemingly frequent reports on samples from low SES communities in studies of community violence is that exposure to violence is more likely to occur in these communities. One reason for this trend may be that gangs are more prevalent here (Kaminer, du Plessis, Hardy, et al., 2013; Pinnock, 2016; Ward & Cooper, 2012). For instance, in the Western Cape, gang membership can be perceived as having various enticements for youth, such as protection, status, material and financial rewards (MacMaster, 2010; Ward, 2006). Consequently, gang activities may validate violence as a method to access both material items and social standing for youth affected by socioeconomic marginalization (Ward et al., 2013). It can be argued that youth who join gangs within their community are at a greater risk of being a victim of, or witness to, violence and may be involved in perpetrating violence, such as, physical violence (Kaminer, du

Plessis, Hardy, et al., 2013; Pinnock, 2016; Ward & Cooper, 2012). Further, gang presence in communities often causes tension and fear, and gangs are likely to entice violence and crime by undermining the influence of social morality and norms that are promoted by religious institutions such as the church (Isaacs, 2010; Pinnock, 2016; Petrus, 2015; Standing, 2005). For instance, businesses located in areas where gangs are present are vulnerable to victimization, such as theft or being 'taxed' by gangs for protection (Standing, 2005). Gangs who engage in criminal activities in their communities may increase youth's chances of exposure to community violence, as gang activity in that community may involve both violence and the use of weapons (Pinnock, 2016).

Age and the Adolescent Period

Adolescence is often perceived as a period for increased vulnerability for engaging in risk-taking behaviours. One possible explanation, from a neuroscience perspective, is that there is an increase in sensation seeking which is associated with dopaminergic activity pattern changes that occur during puberty (Steinberg, 2008). In other words, sensation seeking originates in the dopamine pathways which stimulates interest in rewarding and novel activities, often peaking during adolescence (Panksepp, 1998; Romer & Hennessy, 2007; Zuckerman, 1994). Sensation seeking has been associated with various adolescent risky behaviours including consuming of alcohol and cigarette smoking (Romer & Hennessy, 2007). It is worth noting that during adolescence, the maturation of other brain patterns and regions, such as, the prefrontal cortex, which controls decision-making and planning skills that may inhibit risk-taking behaviour in adolescence, matures at a slower rate, and consequently may lead to adolescents being less capable of exercising control over impulsive drives which underly sensation seeking (Chambers et al., 2003; Fuster, 2002; Nelson et al., 2002; Romer & Hennessy, 2007; Spear, 2000). Arguably, adolescence may be understood as a period of vulnerability which comprises of increased experimentation of risky behaviours in tandem with developing an ability to appraise risk-taking (Moffitt, 1993; Romer & Hennessy, 2007). Research suggests that men are more likely than women to be attracted to and engage in risk-taking behaviours, subsequently, predisposing men to victimization and aggressive behaviour which may enhance the inclination to partake in situations which will likely result in physical harm (Fetchenhauer & Rohde, 2002; Scarpa & Haden, 2006).

Across the literature, both longitudinal and cross-sectional research has demonstrated that exposure to violence and community violence including victimization has negative effects on youth's interpersonal interactions, such as decreased levels of empathy, physical health (for example, headaches), and mental health, such as depressive symptoms (Bailey et al., 2005; Baskin & Sommers, 2015; Fowler et al., 2009; Guo et al., 2013; Siegel et al., 2019). Moreover, exposure to community violence may further exacerbate youth's vulnerability for potential school difficulties and mental health problems (Mahalik et al., 2013; Ozer et al., 2017; Spear, 2013; Voisin et al., 2016).

In research reported on by Statistics SA (2018c), experiences of robbery and assault occurred most commonly against individuals who were 16 years or older at the time of the study. For instance, research indicated that individuals between 16- to-24-years old had the highest reports of experiences of robbery (2.8%) relative to other age groupings including 25- to 34-years-old, 35- to 54-years-old, 55- to 64-years-old and those 65 years and older (Statistics SA, 2020). In SA, exposure to community violence is one of the most predominant types of exposure to violence amongst youth, and arguably may be exacerbated further by other demographic factors, including sex (Collings et al., 2013).

Sex

Crime statistics suggest a sex difference in terms of the prevalence rates of crimes in SA. Research shows that in comparison to girls/women, boys/men are more often involved in and impacted by violence (De Wet et al., 2018; Stansfeld et al., 2017). Further, during the 2017/18 period in SA, crime statistics indicated 4.3% of boys who were 16 years or older experienced crime in comparison to 3.1% of girls of the same age (Statistics SA, 2018c).

With regards to victimisation, rates for boys/men appear to be slightly elevated relative to girls/women, a higher proportion of boy/men were victims of theft than girls/women (2.3% and 2.2%, respectively) (Statistics SA, 2020). The results from the Victims of Crime Survey suggested that in terms of street robbery, boys/men (1.2%) had slightly higher reports in comparison to girls/women (1%) (Statistics SA, 2020). Moreover, there were a higher proportion of boys/men who were victims of assault than girls/women, with girls/women reporting 0.3% in comparison to boys/men reporting 0.8% (Statistics SA, 2020). Notably, a higher proportion of girls/women reported experiences of assault and sexual offences relative to boys/men. For

instance, 62.1% of girls/women reported assault compared to 33.3% of boys/men; and 30.2% of girls/women reported sexual offence in comparison to 8.2% of boys/men (Statistics SA, 2018b).

With regards to being a witness to crime and violence, the results of a study by Otwombe et al. (2015), showed that boys, aged 16 to 18 years, were more likely to witness community violence, in comparison to girls. In a SA study carried out with high school learners aged 13 to 19 years, the findings show that boys were more likely to experience exposure to community violence as a witness and/or victim, than girls (Stansfeld et al., 2017). This narrative is further supported by a recent SA community violence study which indicated that boys between the ages of 12 to 18 years, reported significantly greater exposure to community violence such as witnessing violence, relative to girls of the same ages (Donenberg et al., 2020).

Regarding perpetration of crime, according to Leoschut and Kafaar (2017), SA boys are approximately 15 times more likely to perpetrate a crime than SA girls. This finding is further echoed in Sui et al.'s (2020) study which indicated that boys had a higher chance of being a perpetrator of violence including acts of gang membership, carrying a weapon and/or threatening other individuals or peers with a weapon at school in comparison to girls (Sui et al., 2020). Boys may perpetrate crime or violence in various settings including their schools as the school may act as a site for victimization of others in the form of physical and/or verbal bullying or harassment, for example (Finkelhor et al., 2007; Leoschut & Kafaar, 2017; Stevens et al., 2001; Widom et al., 2008). Further, some boys, are perpetrators of violence as they bully younger boys or force themselves on to girls at their school (Ncontsa & Shumba, 2013). A SA community violence study findings show that community violence was often perpetrated by individuals known in the community and the perpetrators were mostly boys and men, ranging between 15 to 50 years old (Mkhize et al., 2012). Potentially it can be argued that sex may play a role in one's vulnerability and risk of exposure to crime which may in turn impact on a number of consequences reported in relation to community violence (Collings et al., 2013; van der Merwe & Dawes, 2007).

Callous-Unemotional Traits, Internalising and Externalising Behaviours and Exposure to Community Violence

Callous-Unemotional Traits

Frequent exposure to community violence may lead to some youth displaying an interpersonal style which is described as callous indifference in expressing empathy for another individual's emotions and feelings. Such behaviour traits are referred to as callous-unemotional

traits (Dembo et al., 2007). Callous-unemotional traits are features of a child's behaviour and personality which comprises reduced guilt, fearlessness, difficulty understanding emotional stimuli, insensitivity to another individual's distress, and higher levels of externalizing behaviours (Cardinale et al., 2018; Scheepers et al., 2011).

The risk for exhibiting callous-unemotional traits has been linked to exposure to community violence as a witness and/or victim (Davis et al., 2015; Kimonis et al., 2008a; Waller, Baskin-Sommers, Hyde, 2018). Research suggests that risk at various levels, including larger contextual, parental and individual levels, are associated with high callous-unemotional traits across youth, and more experiences of exposure to community violence were reported by participants exhibiting a high callous-unemotional traits trajectory relative to youth with low or moderate callous-unemotional traits (Waller, Baskin-Sommers, Hyde, 2018). Further, exposure to community violence as a witness mediated the relationship between various forms of delinquency, including substance use and callous-unemotional traits (Oberth et al., 2017). In a study with male youth aged 13 to 18 years at a juvenile detention centre, findings show callous-unemotional traits as significantly associated with community violence exposure including murder, stabbings, robbery and muggings (Kimonis et al., 2008a). Research in the United States of America with young offenders at a detention facility found positive and significant correlations between callous-unemotional traits and victimization and witnessing violence (Howard et al., 2012). Moreover, the study found that in comparison to male youth with low callous-unemotional traits, male youth with high callous-unemotional traits were more inclined to participate in substance-related delinquency (Howard et al., 2012). It is worth noting that most studies to date focus on witnesses and victims of community violence, with a paucity of studies on callous-unemotional traits and being a perpetrator of community violence.

Youth who are exposed to community violence either through hearing about community violence or being a witness, can develop callous-unemotional traits as a coping mechanism (Davis et al., 2015). This outcome is, however, perceived as a poor reaction to emotional stimuli and may indicate that youth with callous-unemotional traits are emotionally desensitized to experiences of violence and community violence that they are exposed to (Davis et al., 2015). Alternatively, it has been suggested that youth with callous-unemotional traits who are exposed to violence, such as being a witness, may normalize experiences of violence as a way to cope; consequently, leading to the perception of violence as a way to engage and interact with

individuals (Gaylord-Harden et al., 2016). Additionally, research postulates that being a witness of community violence may also increase youth's vulnerability to internalising behavioural problems (Fowler et al., 2009; Wright et al., 2013).

Internalizing Behaviours

Internalizing behaviours in terms of the syndrome grouping are behaviours which are directed inward and often include negative emotional states, such as depressive symptoms and anxiety (Liu et al., 2011). Internalising behavioural traits have been linked to exposure to home, community, and school violence (Evans et al., 2008; Fowler et al., 2009; Janosz et al., 2008; Mkhize et al., 2012; Mrug & Windle, 2010). The experience of these emotions may result in youth developing negative coping mechanisms, such as alcohol or drug use, as a way to alleviate these feelings (Wright et al., 2013). Previous research suggests that victimization is more strongly related to internalizing behavioural problems, than being a witness of school violence (Fowler et al., 2009; Janosz et al., 2008). Hence, one can explore how exposure to community violence may result in some youth experiencing internalizing behavioural problems which are discussed and categorized below according to the widely used Child Behaviour Checklist (CBCL; Achenbach, 1991).

Depressive and Anxiety Symptoms and Withdrawn Behaviour. Previous research spanning over twenty years (e.g., Cooley-Quille et al., 2001; Gaylord-Harden et al., 2011; Gorman–Smith & Tolan, 1998; Margolin & Gordis, 2000; Schwab-Stone et al., 1995) indicates that being exposed to community violence as a witness, victim or perpetrator of violence is associated with adverse outcomes that could affect development and mental health, including depressive symptoms and anxiety symptoms, and manifest as feelings of distress, in youth (Chen et al., 2017; Cooley-Strickland et al., 2009; Copeland-Linder et al., 2010; Fitzpatrick, 1993; Fowler et al., 2009; Gorman-Smith et al., 2004; Ho, 2008; Hong et al., 2014; Lambert et al., 2008; Nöthling et al., 2019; Osofsky et al., 1993; Overstreet, 2000; Singer et al. 1995; Voisin & Berringer, 2015; Wright et al., 2013). Further, youth who are exposed to community violence and who experience depressive symptoms such as irritability, which may present as defiant behaviour, are more likely to experience problems and conflict at home and school, with both parents and peers, and may subsequently lead to youth engaging in offending behaviour (Akse et al., 2007; Hong et al., 2014).

Previous research suggests that youth who are witnesses to violence, such as school violence, were more vulnerable to experiencing symptoms such as depression, post-traumatic stress, dissociation and anxiety (Flannery et al., 2004; Rosenthal, 2000; Youngstorm et al., 2003). This narrative is further supported by a recent SA study found that exposure to violence as a witness or victim, in youth aged 13 to 19 years, increased the risks of exhibiting anxiety and depressive symptoms in addition to post traumatic stress disorder symptoms, and this risk increased as one was exposed to higher degrees of violence (Stansfeld et al., 2017). Notably, findings of a previous SA study indicate that high school youth exhibited anxiety symptoms when being a witness to community violence perpetrated against an individual who is known or acquainted to the witness (Ward et al., 2001). These findings are consistent with more recent research which suggests that being a witness of community violence that is perpetrated against one's peers, acquaintances or family was linked to experiencing symptoms of anxiety (Lamber et al., 2012). These results suggest that the effects of exposure to community violence may be pervasive.

In relation to mental well-being, recent research indicates that some youth who exhibit both anxiety and depressive symptoms may have greater vulnerability of exhibiting symptoms including distress and withdrawn behaviours (Chen et al., 2017). Previous research suggests that youth who are exposed to school violence may exhibit behaviours such as becoming inattentive, isolated and withdrawn when in the classroom (Flannery et al., 2004). Research exploring exposure to community violence, maternal acceptance and child functioning findings indicate that as victimization increases, there was also an increase in withdrawn behaviours (Bailey et al., 2006). In a community violence study with a sample of both male and female youth comparing high vs. low levels of exposure to community violence, the former group reported more internalizing behavioural problems such as withdrawn behaviours (Cooley-Quille et al., 2001). Chronic exposure to community violence as a witness or victim may result in emotional or physiological maladjustment and this may lead to negative outcomes, such exhibiting externalizing and/or internalizing behaviours during one's youth (Finkelhor et al., 2007; Lepore & Kliewer, 2013; Voisin et al., 2016; Wright et al., 2013).

Somatic Complaints. Somatic complaints can be understood as one's personal accounts of physical symptoms including headaches and/or stomach aches and may co-occur with externalizing behaviours (Reynolds et al., 2001). Somatic complaints have been associated with

exposure to community violence as a witness or victim (White & Farrell, 2006). The results of a previous study postulates that youth who are chronically exposed to community violence are likely to experience greater internalizing behavioural problems such as somatic complaints, rather than exhibiting depressive symptoms (Cooley-Quille et al., 2001). Research has suggested that African American youth who reside in low income communities who were witnesses to or victims of violence had reported greater levels of somatic complaints such as abdominal pain or headaches, and further postulates that symptoms of both anxiety and somatic complaints may be associated with stress linked to exposure to violence (White & Farrell, 2006).

Research conducted with youth aged 8 to 13 years suggests that male youth reported more somatic complaints than female youth (Hart et al., 2013). A potential explanation for this finding is that self-reports of physical health problems may be perceived with more acceptability than self-reports of emotional distress amongst male youth (Cooley-Strickland et al., 2009; Jellesma et al., 2008). Notably, research indicates that internalizing behaviours including somatic complaints, withdrawn behaviours, and depressive and anxiety symptoms, may co-occur with externalizing behaviours (Cerda et al, 2008; Liu et al., 2017; White et al., 2013).

Externalising Behaviours

Externalizing behaviours in terms of the syndrome grouping are behaviours which are directed outward and may be directed toward other individuals (Bordin et al., 2013; Liu et al., 2011). Externalizing behaviours comprise of behaviours such as theft, destruction of property, and increased aggression (American Psychiatric Association [APA], 2013; Bordin et al., 2013; Liu et al., 2011) and has been related to both being a victim and witness of community, school and home violence (Evans et al., 2008; Hanish & Guerra, 2002; Mrug & Windle, 2010; Richards et al., 2004). For instance, findings of a recent SA study suggest that amongst male youth externalizing behaviours (although not specified) were associated with being a witness of community violence (Donenberg et al., 2020). Additionally, externalizing behaviours can be understood as a pattern of antisocial or aggressive behaviours (APA, 2013).

Aggression. Research in the field of aggression has suggested that there two distinct forms, namely, reactive aggression and proactive aggression (Myers et al., 2018). Reactive aggression can be understood as a set of behaviours which are retaliatory, defensive and result in the aggressor directing harm to an individual as a reaction to perceived provocation, whereas proactive aggression can be described as a set of behaviours which are predatory and lead to the

aggressor harming another individual to reach a desired goal (Hinsberger et al., 2016; Little et al., 2003; Marsee et al., 2011; Myers et al., 2018). Proactive aggression has been related to callous-unemotional interpersonal communication style and a reduced reaction to emotional stimuli which are negative. In contrast, reactive aggression has been associated with deficits in impulse control, reduced frustration tolerance and poor response regulation to provocation (Crapanzano et al., 2010; Lozier et al., 2014; Marsee et al., 2011; Munoz et al., 2008; Thornton et al., 2013).

Previous research has shown a well-established relationship between risk for violence and aggression, in youth who are exposed to violence such as community violence (Kimonis et al., 2011; Maschi & Bradley, 2008; Myers et al., 2018). Research posits that there is an increased risk of externalizing behaviours, such as aggression, for youth who are exposed to community violence either as a witness, victim and/or perpetrator (Chen et al., 2013). For instance, youth who are continuously exposed to violence, through witnessing or victimization, may come to understand that perpetrators often intentionally commit acts of violence, and this may make youth more prone to perceiving others' intentions in a hostile manner and increase their use of aggressive strategies as a way to resolve a situation (Bradshaw et al., 2009; Calvete & Orue, 2011; du Plessis et al., 2015). Youth exposed to violence may come to access aggressive responses more quickly when faced with provocation and this may potentially be explained as one's stress response system being overactivated, as a consequence of deficits in self-regulation and due to adapting to negative situations and being in a continuous state of expecting adverse situations (Bowman et al., 2015; Calvete & Orue, 2011; Hsiao et al., 2018).

In terms of social learning, aggressive male youth may come to develop a repertoire of violence, which is further influenced by the environments that youth are affected by, such that they may be attracted to environments which promote violence (van der Merwe et al., 2012). Consequently, community violence exposure frequently results in aggressive behaviour, which may place youth at risk for engaging in offending behaviour later on (McEachern & Snyder, 2012; Stoddard et al., 2011). For example, youth who are aggressive would be more likely to associate with peer groups that are aggressive which in turn increases the chances of partaking in offending behaviour and violence and may increase the chances of being a witness and perpetrator of violence (Harachi et al., 2006; Lambert et al., 2012; van der Merwe et al., 2012). Research suggests that untreated aggression as well as untreated conduct difficulties and

depression in youth may lead to adverse life events such as failure in school, criminality, unemployment and perpetration of violence with an immeasurable loss of youth's social potential (du Plessis et al., 2015). Further, it is postulated in a SA study that youth who are exposed to violence as victims may later become perpetrators of violence as a way to gain a sense of control of their life (Clark, 2012).

It has been argued that the association between aggressive behaviour and exposure to community violence may be bi-directional (Scarpa & Haden, 2006). For instance, individuals who are aggressive are more likely to be victimized as a result of various factors, including partaking in risky situations, being a gang member and/or being in a fight, as one may be both the victim and aggressor (Scarpa & Haden, 2006). On the other hand, being exposed to community violence may increase the chances of adolescents exhibiting physically aggressive behaviours and this may in turn act as a contributor to high levels of community violence (Farrell et al., 2020).

Offending and Rule Breaking Behaviours. Previous research has established an association between offending behaviour in youth and exposure to community violence (Burton & Jarret, 2000; Chen et al., 2013; Gorman-Smith et al., 2004; Hong et al., 2014; Patchin et al., 2006). Research suggests that children and adolescents who regularly witnessed community violence were likely to participate in criminal activities and offending behaviour during both their youth and adulthood (Patchin et al., 2006). Moreover, externalizing and internalizing behaviours are believed to be examples of possible mechanisms which may explain the association between offending behaviour and exposure to community violence (Hong et al., 2014).

Rule breaking behaviours can be understood as behaviours which comprise of truancy, substance use and aggression. In a recent study exploring exposure to community violence, it was suggested that experiencing violence within one's home, such as being a victim of physical violence, was related to rule breaking behaviours (Izaguirre & Calvete, 2018). Further, in a community violence study with a sample of youth from 14 to 19 years, researchers postulate that community violence exposure is linked to conduct behavioural difficulties, which includes the violation of social norms and rule breaking behaviour (APA, 2013; Poquiz & Fite, 2018).

In a previous longitudinal community violence study, the study framed offending behaviour in terms of rule breaking behaviours as defined by the CBCL as smoking, cheating

and alcohol consumption (Achenbach & Rescorla 2001; Hardaway et al., 2014). Moreover, the findings of the longitudinal study suggested that after controlling for demographics, a history of child abuse, academic performance, delinquency and anxious/depressed symptomatology, community violence exposure in early adolescence was linked to an increase in delinquency, which was further associated with poorer academic performance during mid-adolescence (Achenbach & Rescorla, 2001; Hardaway et al., 2014). Arguably, the impact of exposure to community violence is multifaceted and may have adverse implications for youth's education.

There is a large body of research which has looked at factors that increase youth's risk for offending and rule breaking behaviours and thus perpetrating crimes or violence. Factors including parental rejection, lack of supervision from one's parent(s) and poor parent-child involvement predict youth offending behaviour (Loeber & Stouthamer-Loeber, 1986; Sullivan, 2006). This suggests youth engagement in offending behaviour can be perceived as a potential outcome of exposure to certain adverse contextual factors. Furthermore, social factors such as peer influence may act as a determinant in youth engaging in offending behaviours (Meldrum et al., 2013; Pratt et al., 2010). Literature in the field of peer influences suggest that youth who are vulnerable to the influence of their peers are more likely to engage in illegal substance use, risky sexual behaviour and exhibit externalizing behaviours (Meldrum et al., 2013). Consequently, partaking in risky and offending behaviours can be understood as possible consequences of contextual factors and exposure to community violence as either a witness, victim and/or perpetrator.

Substance Use. Few studies have explored the link between substance use and exposure to community violence specifically (e.g., Kilpatrick et al., 2003; Voisin et al., 2007). In a previous study, which controlled for demographics and family abuse of substances, the findings suggested that being exposed to violence within one's community tripled the risk for dependency or abuse of substances (Kilpatrick et al., 2003). Another study found that being a witness to community violence was linked to the use of cannabis and alcohol (Voisin et al., 2007). More recent studies found that increased levels of reported exposure to community violence by participants was related to illegal substance use, such as alcohol, cannabis, and ecstasy (Lofving-Gupta et al., 2018; Stansfeld et al., 2017; Voisin et al., 2016). Previous research indicates that youth who witness violence in their communities are at a tripled risk for illegal substance use, such as cocaine and alcohol (Voisin et al., 2007; Voisin et al., 2016). Consequently, this suggests

that youth who are exposed to community violence may use or consume illegal substances, and this can be perceived as engaging in offending behaviour.

South African Community Violence Studies

SA community violence studies have focused on the impacts of exposure to community violence on adjustment (Barbarin et al., 2001; du Plessis et al., 2015; Shields et al., 2008; Shields et al., 2009a; Stansfeld et al., 2017; Sui et al., 2018), and found that victimization occurred within one's school or community and often lead to experiences of psychological distress, internalizing and externalizing behaviours (Donenberg et al., 2020; du Plessis et al., 2015; Isaacs, 2010; Mkhize et al., 2012; Shields et al., 2009a; Shields et al., 2009b; Stansfeld et al, 2017; Sui et al., 2018). Further, SA studies have explored prevalence rates of (Ngidi, 2010; Nöthling et al., 2019; Kaminer, du Plessis, Hardy, et al., 2013; Ward et al., 2001), and risk factors for exposure to community violence (Nöthling et al., 2019; Otwombe et al., 2015), as well as the relationship between psychological functioning and exposure to community violence (du Plessis et al., 2015; Isaacs, 2010; Ngidi, 2010; Shields et al., 2008; Stansfeld et al., 2017; Sui et al., 2018). These studies found that being exposed to one form of violence increases one's vulnerability to exposure to other types of violence (Ward et al., 2001), that youth's sense of safety was diminished due to exposure to community violence (Shields et al., 2008), that exposure to community violence is experienced day-to-day (Kaminer, du Plessis, Hardy, Benjamin, 2013), and that SA male youth were more vulnerable than SA females to being a victim and witness of community violence (Donenberg et al., 2020; Otwombe et al., 2015; Stansfeld et al., 2017).

SA community violence studies have recruited samples of SA youth aged approximately 12 to 20 years old, who resided in areas of low SES (Donenberg et al., 2020; du Plessis et al., 2015; Isaacs, 2010; Kaminer, du Plessis, Hardy, et al., 2013; Ngidi, 2010; Otwombe et al., 2015; Shields et al., 2008; Shields et al., 2009a; Shields et al., 2009b; Sui et al., 2018). However, community violence studies carried out in SA (see Appendix A) mainly focus on witnessing violence and/or victimization (Isaacs, 2010; Mkhize, et al., 2012; Otwombe et al., 2015; Shields et al., 2009a; Shields et al., 2009b; Stansfeld et al., 2017; Sui et al., 2018) and not on all three of the following levels: witness, victim or perpetrator of community violence, and the associated internalizing and externalizing behaviours. Notably, two SA studies looked at both internalizing and externalizing behaviours as outcomes, however, the one study did not explore youth as perpetrators of community violence but rather looked at victimization of youth and the other did

not explore witnessing community violence (Donenberg et al., 2020; du Plessis et al., 2015). Further, another study only focused on internalizing behaviours, but did not explore externalizing behaviours as an outcome (Sui et al., 2018). A previous study looked at witnessing, victimization and perpetration of violence (Shields et al., 2009a), however, the study did not explore internalizing or externalizing behaviours as outcomes. Arguably, there is a dearth of literature that focuses on all three levels of exposure to community violence (witness, victim and perpetrator) in relation to these internalising and externalising outcome factors as well as callous-unemotional traits and further studies focusing on these outcomes in a SA context is needed.

Theoretical Model as a Framework for Understanding Community Violence

The ecological model, also known as the ecological transactional model, advanced to the bioecological model, and later the mature Process-Person-Context-Time (PPCT) model, developed by Bronfenbrenner, has been applied to multiple fields of study such as child maltreatment, youth violence, educational experiences of young offenders in custodial care, and most popularly in the field of exposure to violence (Antunes & Ahlin, 2017; Krug et al., 2002; Overstreet & Mazza, 2003; Shafi, 2020; Tudge et al., 2016). The ecological model was originally focused on explaining how development may occur and mainly focused on the influence of one's context on development; consequently, perceiving development as emerging from the interaction between the context and the individual (Rosa & Tudge, 2013). Further, the bioecological model has a larger scope and focuses on the developing individuals' characteristics as well as characteristics of the individuals they interact with, the context in which the individual spends their time and their relation to other individuals (Rosa & Tudge, 2013). The bioecological model additionally focuses on the individual's development over time (Rosa & Tudge, 2013). The mature Process-Person-Context-Time (PPCT) model is similar to that of the bioecological model with the PPCT model differing in that the model also focuses on mechanisms which drive an individual's development (Rosa & Tudge, 2013). Further, research postulates that the PPCT model's main construct is proximal processes which can be understood as the shared interactions between a developing individual and one or more objects, symbols and individuals in their immediate setting (Xia et al., 2020). It is important to note the model is complex and that there is continuous debate regarding how appropriately the model is operationalised and how researchers should apply this model (Siraj & Huang, 2020). For instance, Hamby and Grych (2013) argue that while the model provides a framework for understanding how violence may occur within the

context of multiple interacting systems and influences, the model does not provide emphasis on how factors may interact and influence one another to produce violent behaviour.

It is worth noting that the bioecological model provides a holistic framework and integrates both social-cultural/contextual and psychological perspectives of human development (Siraj & Huang, 2020). The model looks at the relationship between contextual and individual factors and considers the influence of these factors on each other and on child development (Bronfenbrenner, 1977; Cicchetti & Lynch, 1993; Krug et al., 2002; Overstreet & Mazza, 2003). When applied to studies examining violence, the model acknowledges that violence is a consequence of intricate interplay of factors, such as social, individual, cultural, environmental, and relationship factors (Krug et al., 2002). The model comprises of levels, namely, individual (microsystem), interactions between individuals in the microsystem (mesosystem), community (exosystem), societal (macrosystem) and time (chronosystem) (Krug et al., 2002; Overstreet & Mazza, 2003; Shafi, 2020). Moreover, when taking into consideration the PPCT model there is a more detailed focus on chronology, which is a time-based dimension that is present at all levels in the model (Paquette & Ryan, 2001). For instance, the PPCT model's time construct may also include microtime, mesotime and macrotime (Xia et al., 2020). Microtime can be understood as the degree to which there may be discontinuity or continuity of an activity or interaction and as a result more broadly focuses on what may be occurring during the course of proximal processes, mesotime focuses on the degree to which proximal processes may occur over months, weeks or days, and macrotime focuses on changing events and expectations of larger society (Bronfenbrenner & Morris,1998; Xia et al., 2020).

Further, the bioecological model can be used to understand how community violence is associated with youth development as the model focuses on development and youth being situated within interacting systems including their school, community and family (Bronfenbrenner & Morris, 2006; DaViera & Roy, 2020). Consequently, the model accounts for exposure to community violence as not being a context-specific incident but as occurring across multiple settings that youth interact with. For example, youth may not attend school within their own community and may have to travel to a different community where they could be exposed to different threats (DaViera & Roy, 2020). The model can be understood as centring around the individual and distinguishes community violence from other forms of violence as it focuses on

how the development of youth is impacted by the different settings they occupy and interactions they have within these settings.

More recent studies have applied the ecological model to understand risk factors to exposure to community violence and its impact on youth (Salzinger et al., 2002), to explore youth perpetration and violent victimization (Matjasko et al., 2010), youth victimization within schools (Ferre et al., 2011), exploring child maltreatment (MacKenzie et al., 2011) and preventing adolescent victimization, bullying and aggression (Espelage, 2014). Arguably, this model has been applied in various fields of research including exposure to community violence. To gain further insight into the implications of exposure to community violence, it is crucial that studies such as the current one explore exposure to community violence as a witness to, victim and/or perpetrator of community violence.

Rationale

The literature reviewed above indicates that exposure to community violence, as either a witness, victim or perpetrator, has detrimental effects on youth's physical and mental health, and is likely to lead to behavioural and emotional outcomes such as callous-unemotional traits, and internalizing and externalizing behaviours (Baskin & Sommers, 2015; Dembo et al., 2007; Guo et al., 2013; Myers et al., 2018; Siegel et al., 2019; Wright et al., 2017). Interestingly, factors such as age, sex, and SES can increase the risk of exposure to community violence for some individuals. The literature suggests that male youth with low SES backgrounds are more vulnerable to exposure to community violence (Nöthling et al., 2019; Sommer et al., 2017). Moreover, the risk of exposure to community violence can be further exacerbated when one resides in a context such as SA, which has high rates of both crime and violence (Statistics SA, 2018c; Swartz & Scott, 2014).

A review of the literature shows that there is a dearth of literature looking at exposure to community violence as a witness, victim or perpetrator and the associations to internalizing and externalizing behaviours and callous-unemotional traits in male youth, in the same study. Further, SA community violence studies only look at specific aspects of exposure to community violence in relation to being a witness, victim or perpetrator, rather than from concurrent perspectives. Externalizing and internalizing behaviours are often not explored together as outcomes of exposure to community violence, but are assessed separately. Hence, this highlights a need for research exploring the associations between community violence at all three levels in

relation to callous-unemotional traits, internalizing and externalizing behaviours as outcomes in a sample of male youth, as this research may provide an opportunity to inform future interventions and may provide more insight into better understanding of male youth in contexts similar to SA.

Aims and Hypotheses

The research aimed to investigate possible callous-unemotional traits, internalizing, and externalizing behaviours associated with exposure to community violence (as a witness, victim or perpetrator of violence) in a sample of SA male youth.

I hypothesized that:

Greater exposure to community violence (as a witness, victim or, perpetrator of community violence) may lead to higher callous-unemotional traits, internalising and externalising behaviours.

Method

Design and Setting

This study formed part of a larger research project which aimed to investigate traumatic brain injury (TBI) and behavioural, emotional, and executive functions in a sample male young offenders and non-offenders. The data for the current study was collected as part of that larger study. The research design for the current study was cross-sectional and quantitative. The independent variable was exposure to community violence, with three levels: witness to, victim and perpetrator of, community violence. The dependent variables were callous-unemotional traits, internalizing and externalizing behaviours. Data was collected from four different public high schools within Cape Town which were considered to be of low to middle SES, and data collection took place on school premises during school hours.

Participants

The study participants were males aged 13 to 21 years, who were English- and/or Afrikaans-speaking and were recruited using purposive sampling methods. An a priori power analysis indicated a sample size of $N = 43$, for a multiple regression analysis with a power of .80, with alpha set at 0.5 and a medium effect size.

Individuals were excluded from participating in the study if they were: (a) of female sex, (b) had a current or prior diagnosis of neurological or psychiatric illness, (c) and were not English- and/or Afrikaans- speaking.

The current study made use of a selection of data (e.g. data on measures of internalizing and externalizing behaviours and exposure to community violence), that was collected as part of the larger study. Notably, in addition to these behavioural and emotional measures and exposure to community violence measure the larger study also collected data on TBIs and IQ.

Measures

Screening Measures

Alcohol Use Disorders Identification Test (AUDIT). The AUDIT is a measure that contains 10 self-report items on a 5-point Likert-scale (Saunders et al., 1993). Higher scores on the Likert-scale are indicative of risky or harmful alcohol usage (see Appendix B). Questions on the AUDIT address the consumption and dependence of alcohol as well as the associated consequences (Peltzer et al., 2011). The AUDIT is used to identify current and lifetime alcohol use and detect patterns of problematic alcohol use (Saunders et al., 1993).

The internal consistency of the AUDIT has been assessed by 10 studies which found that when measuring alcohol dependence, the AUDIT has satisfactory total item correlation (.95) and reliability (.80; Meneses-Gaya et al., 2009). The AUDIT has been identified as having a high validity and being both precise and sensitive for both females and males across cultures (Blank et al., 2015; Saunders et al., 1993; Seth et al., 2015). When used in SA, the AUDIT has been found to have good internal consistency (.84; Peltzer et al., 2011). The AUDIT has been used in previous SA studies (Adams et al., 2013; Myer et al., 2008).

Maudsley Addiction Profile (MAP). The MAP is a self-report measure comprising of four sections, namely, substance usage, engagement in health risk behaviours, individuals psychological and physical health and individuals social and personal functioning, which can be used when testing youth (Marsden et al., 1998). This questionnaire has good reliability (.81 to .94) and face validity (Marsden et al., 1998). The MAP has both satisfactory validity and test-retest reliability when used in SA research (Dannatt et al., 2014). The MAP has been used widely across different social and cultural contexts, such as Spain and Italy, and can be perceived as a culturally appropriate measure (Marsden et al., 2000).

Initially, the larger study made use of sections of the MAP and AUDIT to assess substance and alcohol use, respectively. (Barbieri, 2003; Marsden et al., 1998). However, these measures were later replaced by the ASSIST.

Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST). The ASSIST is an 8-item screening measure developed by the WHO (see Appendix C) to assess dependent, hazardous and/or harmful use of alcohol, tobacco, and psychoactive substances, such as hallucinogens, over the past three consecutive months (Henry-Edwards et al., 2003). The administration of the ASSIST can be done by a variety of professional parties, such as psychologists, social workers, and nurses (Henry-Edwards et al., 2003).

The ASSIST was used in a SA study and had a satisfactory content validity score (KMO= .769) and reliability score (.83; Simelane-Mnisi & Mji, 2017).

It is worth nothing, that the larger study initially used the AUDIT and MAP to investigate alcohol and substance abuse, however, this was later changed to using the ASSIST (during the course of data collection). Consequently, the current study includes all three measures.

Measure of Exposure to Community Violence

Child Exposure to Community Violence Checklist (CECV). The CECV is a self-report measure which comprises of 39-items, which are used to assess an individual's exposure to various types of violence within the community and home, including experiencing, hearing about and witnessing community violence (Richters & Martinez, 1993; Amaya-Jackson, 1998; Foster et al., 2004). The CECV is used to assess exposure to violence through direct victimization and witnessing of violence (Kaminer, du Plessis, Hardy, et al., 2013). The CECV has a 5-point Likert-scale which ranges from '*never' to 'more than 10 times*', including a response option of '*don't know'* and this is used as an indicator of the number of times a participant is exposed to and experiences a certain type of violence (Kaminer, du Plessis, Hardy, et al., 2013; Nothling et al., 2019; Martin et al., 2013). The CECV has both good test-retest reliability and good to excellent internal consistency (.89), and has previously been used in SA studies (Weierstall et al., 2013; Nothling et al., 2019).

Measure of Callous-Unemotional Traits

Inventory of Callous-Unemotional traits (ICU). The ICU is a 24 -item self-report scale (see Appendix D) which assesses both callous-unemotional and antisocial traits in individuals (Essau et al., 2006; Kimonis et al., 2008b). The ICU has three subscales, namely; Callousness,

Uncaring, and Unemotional Traits and comprises of a 4-point Likert scale, with some items needing reverse scoring (Essau et al., 2006). The ICU can be completed by teachers, parents or legal guardians and the participants themselves (Kimonis et al., 2008b; Roose et al., 2010). The ICU has a good internal consistency, ranging between .74 to .85 (Kimonis et al., 2008b). The ICU has been successfully used in a published African study and was shown to have good internal consistency (.84; Nwafor et al., 2020).

Measure of Internalizing Behaviour

Beck's Depression Inventory- Second Edition (BDI-II). The BDI-II is a 21-item self-report measure used for screening depressive symptomatology, with higher scores indicative of greater levels of depression (see Appendix E). Each item has four statements; participants are required to select a statement which most accurately applies to how they have felt over the past two consecutive weeks (Beck et al., 1996). The BDI-II can be used with individuals aged 13 to 80 years old and has discrete ranges of scores which indicate: 1-10, emotional ups and downs acknowledged as usual experiences; 11- 16, mild mood turmoil; 17-20, borderline depression; 21-30, moderate depression and scores over 40, severe depression (Beck et al., 1996). The BDI-II has excellent reliability (Cronbach's alpha= .93) and validity (Cronbach's alpha = .96), indicating that it has high internal consistency (Beck et al., 1996; Dozois et al., 1998). It has been administered in SA samples and has been demonstrated to be appropriate when testing adolescents across a variety of contexts (Ghassemzadeh et al., 2005; Steele & Edwards, 2008). The BDI-II has been used in a SA study and was shown to have good internal reliability (.91; Pluddemann et al., 2010).

Measure of Externalizing Behaviour

Reactive-Proactive Aggression Questionnaire (RPQ). The RPQ assesses proactive and reactive aggression through a 23-item scale (Raine et al., 2006). It is a self-report measure used to assess the presence of aggression and can be used with adolescent samples. The measure has 11 items which measure reactive aggression and 12 items which measure proactive aggression. The scores for each of the items are summed together to provide an overall score of aggression. The RPQ has fair item-total correlations for both reactive and proactive scales, which together range from .41 to .60. The reactive and proactive scales additionally have excellent internal reliability of .83 (Raine et al., 2006). The RPQ has adequate reliability and validity with

identification of impulsivity, hostility and delinquency when looking at adolescent samples (Raine et al., 2006). The RPQ has been successfully used in a SA study (Laubscher et al., 2013).

Measure for Both Externalizing and Internalizing Behaviour

The Child Behaviour Checklist Youth Self-Report form (CBCL; YSR). The CBCL Youth Self-Report comprises of 118 items which assesses behavioural problems in youth aged 11 to 18 years (Bordin et al., 2013). It has 2 subscales, namely externalizing and internalizing behaviours, with associated cut-off scores which are used to determine whether the individual's behaviour is 'non-clinical', 'borderline' or 'clinical'. Externalizing behaviour comprises of aggression, bullying, and delinquency; whereas, internalizing comprises of anxiety, unpredictable mood swings and social withdrawal scales (Achenbach, 1991; Achenbach & Rescorla, 2001).

The CBCL Youth Self-Report has inter-rater reliability ranging from .93 to .96. The CBCL Youth Self-Report has been used in a variety of contexts such as Ethiopia and Ghana, as a way to evaluate cross-cultural validity (Ivanova et al., 2007; Roessner et al., 2007). The CBCL Youth Self-Report has been both linguistically and culturally adapted for use with SA populations (Kariuki et al., 2016). Previously, in a SA study, the CBCL Youth Self-Report has shown to have good test-retest reliability (.76) and inter consistency (.94; Kariuki et al., 2016). Additionally, CBCL Youth Self-Report externalizing scores had a coefficient of .86, while internalizing scores had a coefficient of .87, with the subscales having a Cronbach's alpha coefficient ranging between .65 to .86 (Kariuki et al., 2016). The CBCL Youth Self-Report has been published in SA studies (Cluver et al., 2007; Kariuki et al., 2016).

Procedure

Once we received ethical approval from the Department of Psychology's Research Ethics Committee at the University of Cape Town (UCT) (reference number: PSY2019-035; see Appendix F) and Western Cape Department of Education for the larger study as well as the current study (see Appendices G and H, respectively), we contacted four different public high schools in Cape Town and arranged a meeting with the schools' principals to discuss the nature and purpose of the study. After permission was granted by the schools, we started to recruit participants from the respective schools by asking for class lists. Thereafter, consent forms (see Appendix I) were sent to the parent(s) or legal guardian(s) of all the male students at the respective schools. Upon the return of signed consent forms and following assent from

participants (see Appendix J), the measures described above were administered by myself and a team of postgraduate psychology students from the Department of Psychology at UCT. The research team provided the participants with an assent form before beginning the interview and answered any questions or concerns the participants had either before the interview and/or once the interview was concluded. The researchers and all the postgraduate students assisting were trained in the administration and scoring of the measures to ensure that the testing of the measures was standardized. The testing of the screening, and emotional and behavioural measures took place in quiet areas within the selected high schools; and this was done to reduce the risk of participants becoming distracted by external factors such as noise or peers, and to maintain the participants' confidentiality. The interviews took approximately 90 minutes and the research team were paired in twos when interviewing participants. Further, participants received refreshments during the interview, in the form of a snack pack (chips, juice box and a fizzer sweet) to combat potential fatigue. Participants also received a Pick and Pay or Checkers voucher, valued at a R50, as compensation for their time. Once interviews were concluded, participants were debriefed by a member of the research team (see Appendix K).

Ethical Considerations

This study received ethical approval from UCT's Department of Psychology Research Ethics Committee (see Appendix F) and the Western Cape Department of Education (see Appendix H). The larger study (which this study is a part of) received ethical approval from both UCT's Department of Psychology Research Ethics Committee and Western Cape Department of Education. Moreover, this research was carried out in accordance with UCT's Ethics Code for Research Involving Human Subjects.

Informed Consent and Assent

After ethical approval for the study was obtained from the above-mentioned bodies, consent from participants' parent(s) or legal guardian(s) was sought, if they were under 18 years of age. Information about the nature of this study and what it would entail was given to participant's parent(s) or legal guardian(s) in the form of a consent form (see Appendix I). Parent(s) or legal guardian(s) were asked to sign the consent form and were given the option to contact the principal investigator via email if they had any questions or concerns beforehand. The consent form explained that participation in the study was voluntary and that the participant was able to withdraw from the study at any time. Thereafter, assent was sought from each of the

participants before the questionnaires were administered (see Appendix J). In the case of participants aged 18 to 21 years at the time of the study, they were provided with and asked to sign the consent form and the nature of the study was also explained to them along with the voluntary nature thereof.

Confidentiality

The research team explained to participants that their identity would at all times be kept confidential and anonymous as a participant number was used to label their data. A separate record was created and kept to identify participants by their participant number; this record was only accessible to the research team and created should the research team need to contact a participant during the study. It was further explained to participants that in the event the study is published, their personally identifying information and identities would remain confidential. Once the interviews were completed, electronic data collected was captured on a password protected computer and hard copies were stored in locked filing cabinets in the Department of Psychology at UCT, in a secure area.

Benefits and Risks

The study involved minimal risk to the participants. However, some participants may have experienced some discomfort when asked to recall experiences of community violence (see referrals below). Participants were likely to experience fatigue or boredom during the interview procedure as multiple measures were used. To combat this, participants were able take breaks. This allowed the participant to pace the interview at a speed they were comfortable with. Participants received refreshments during the interview, in the form of a snack pack to combat potential fatigue. Additionally, participants received a Pick and Pay or Checkers voucher valued at R50 as compensation for their time.

Debriefing

Upon completion of the questionnaires, participants were verbally debriefed, and received a debriefing form (see Appendix K). The debriefing form contained the contact information of various parties involved in the study, such as the postgraduate administrator, supervisor and research team members' email addresses, if the participant, parent(s) or legal guardian(s) had any concerns or questions regarding participation.

Referrals

If it was found that a participant's scores on the behavioural and/or emotional measures were in the borderline or clinical range or they displayed distress in any way, they were referred to the high school's counsellor, psychologist or social worker. Thereafter, participants and their parent(s) or legal guardian(s) could choose whether or not they wanted to have sessions with the counsellor, psychologist or social worker.

Statistical Analyses

The Statistical Package for the Social Sciences (SPSS) version 25.0 was used to analyse the data collected. Following convention, significance was set at $p < .05$. Before analysis began, the data was cleaned and checked.

Child Exposure to Community Violence Checklist (CECV)

The CECV had one overall outcome category labelled as CECV total which is the total raw score each participant received on that measure. To address the aim of the study, which was to investigate possible callous-unemotional traits, internalizing, and externalizing behaviours associated with exposure to community violence (as a witness, victim or perpetrator of violence), I created three subcategories within the CECV, related to witnessing community violence (CECV Witness), being a victim of community violence (CECV Victim), and perpetrating community violence (CECV Perpetrator), for this measure.

The categorization of the questions into the three broad subcategories for the current study was guided by an unpublished Masters thesis, which explored the relationship between developing psychopathology and community violence exposure, in SA youth who were seeking treatment (Ngidi, 2010). The previous study had specific subcategories of exposure to community violence including "witness of family violence, witness of community violence, victim of sexual assault, victim of physical assault, perpetrator of sexual assault and perpetrator of physical assault" (Ngidi, 2010, p.44). Further, three co-raters, all of whom were enrolled for Masters degrees in Psychology at the time and who had backgrounds in research, were asked to assist with categorization of questions on the CECV into the three subcategories and was overseen by my supervisor. Each of the co-raters were given a copy of the CECV and then asked to assign the questions to one of the three subcategories. If co-raters felt that a question did not fit into one of the three subcategories they did not assign a label to that question. This was the case for 4 of the 39 questions on the CECV. Thereafter, in a consensus meeting where the

remaining 35 questions were discussed, co-raters agreed on 33 out of the 35 remaining questions for the three subcategories, (this is approximately 94% agreement amongst co-raters). The remaining two questions were then placed into the subcategory with the most agreement (see Appendix L).

Univariate Analyses

Univariate analyses were carried out to see whether any demographic or screening variables (such as age and substance use) were correlated with the outcome variables: callous unemotional traits, internalizing and externalizing behaviours. Only variables (from the univariate analysis) found to be significantly related to the outcome variables were entered into the regression. Mann Whitney U tests were conducted to compare outcomes for the MAP and ASSIST. These tests were 2-tailed (*p*).

Regression analyses were carried out to assess whether exposure to community violence (CECV total) and its subcategories (witness, victim, or perpetrator) predicted the outcome variables including internalizing and/or externalizing behaviours. The first regression analysis looked at whether CECV total predicted the outcome variables while controlling for variables found to be significant in the univariate analyses (such as the AUDIT, ASSIST, MAP and/or age). I placed the control variables into block one and step two consisted of placing CECV total into the second block. The subsequent regression analyses followed the same procedure to assess whether each of the subcategories (CECV Witness, CECV Victim, and CECV Perpetrator) predicted outcome variables. Each subcategory was separated into their own regression models, as a result four regression analyses were run to look at the effect of CECV total and its subcategories on the study outcome variables.

None of the data violated assumptions of normality or independence. Furthermore, most of the independent variables in the regression analyses were not too highly correlated, and all VIF figures were close to 1, providing evidence to suggest no problems with multicollinearity.

Results

Sample Characteristics

The final sample included 108 participants, all of whom identified as males. In terms of grades, 57.4% of participants were either in Grade 8 or 9 at the time of testing, while 42.6% of

participants were either in grade 10, 11 or 12. Participants were 15 years old on average (see Table 1). Table 1 also displays descriptive statistics for participants' reported scores for both emotional and behavioural measures. Participants' reported scores for depressive symptoms and alcohol use suggests that on average participants display mild mood disturbance (scores of 14-19 on the BDI-II) and low-risk of alcohol consumption (scored of 1-7 on the AUDIT), respectively. Reported scores for callous-unemotional traits on average was 21.56, with highest possible score being 72 (a reminder that higher scores on the ICU are suggestive of an increased frequency of antisocial and callous-unemotional traits; Pechorro et al., 2017). Further, participants' reported scores for proactive aggression were higher than reported reactive aggression scores, with higher scores suggestive of greater levels of aggression for both variables (Cenkseven-Önder et al., 2016). Exposure to community violence has a mean total score of 35.85, with the highest possible score being 156, with higher scores on this scale indicative of higher levels of exposure to violence (Fincham et al., 2009).

Table 1

Descriptive Statistics for Age, and Behavioural and Emotional Measures (N=106)

	N	*M*	*SD*	Min	Max
Age (years)	108	15.35	1.72	13	21
BDI – II	108	14.75	8.86	1	52
AUDIT	108	5.17	5.89	0	24
ICU[a]	106	21.56	7.35	5	37
RPQ Total	108	11.36	6.89	1	40
RPQ PA	108	3.06	3.50	0	24
RPQ RA	108	8.31	4.14	1	19
CECV Total	108	35.85	20.82	1	103
CECV Witness	108	22.58	12.27	1	56
CECV Perpetrator	108	1.14	1.51	0	7
CECV Victim	108	7.06	7.02	0	42

Note. BDI-II = Becks Depression Inventory Second Edition; AUDIT = Alcohol Use Disorder Identification Test; ICU= Inventory of Callous-Unemotional Traits; RPQ Total = Reactive Proactive Aggression Questionnaire; RPQ PA= Reactive Proactive Aggression Questionnaire – Proactive Aggression Subscale; RPQ RA= Reactive Proactive Aggression Questionnaire – Reactive Aggression Subscale; CECV Total= Child Exposure to Community Violence.

[a] Data for 2 participants for the ICU are missing as the participants did not complete the measure.

Internalizing and Externalizing Behaviours

Table 2 presents descriptive statistics for participants' reported scores for both internalizing and externalizing behaviours as measured by the CBCL. On average, participants reported higher rates of internalizing than externalizing problems (M = 61.44 vs 54.85; respectively). Participants' average reported scores for internalizing problems and its sub-scales lie within the borderline range (a reminder that for these scales T-scores between 60 to 65 are categorised as borderline while T-scores higher than 65 are categorised within the clinical range for these scales; Achenbach, 1991; Achenbach & Rescorla, 2001). Further, average reported scores for externalizing problems and its sub-scales fall within the normal range as defined by the CBCL. For the internalizing behaviour syndrome grouping, on average the highest reported scores was for the withdrawn/depressed sub-scale and the highest reported score for the

externalizing behaviour syndrome grouping was the rule breaking sub-scale. Notably, the maximum scores for both syndrome groupings and the sub-scales all fall within the clinical range (scores above 65).

Table 2

Descriptive Statistics for Internalizing and Externalizing Behaviour CBCL Subscales and Syndrome Groupings (N=104)

	M	*SD*	Min	Max
Internalizing Problems	61.44	10.25	30	84
Anxious/Depressed	60.89	9.32	45	94
Withdrawn/ Depressed	62.06	9.45	50	96
Somatic Complaints	60.61	9.18	50	93
Externalizing Problems	54.85	11.09	29	85
Rule Breaking	58.47	8.57	50	93
Aggression	56.23	7.49	50	82

Note. Data for 4 participants were missing – these participants were not tested on the CBCL as they were over the age limit (21 years) for this measure.

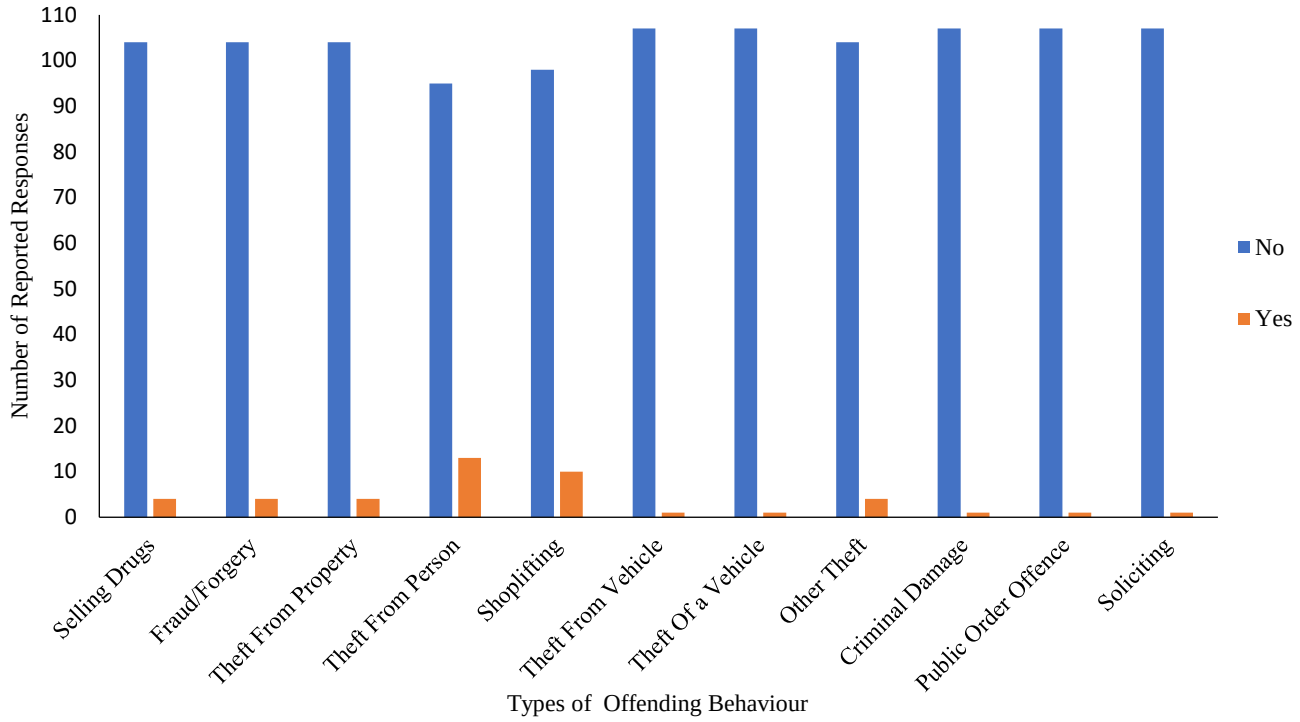
Screening Measures (Reported Offending and Substance Use Behaviours)

Of the 108 participants, when asked whether they had engaged in offending behaviours within the last three months (at the time of the assessment), approximately 24% (n = 26/108) reported engaging in some or other offending behaviour. It is worth noting that only 9 (34.6 %) of the 26 participants who reported engaging in offending behaviours, reported engaging in more than one offending behaviour. Further, it is worth noting that one participant (0.3%) reported partaking in ten different offending behaviours and this was the highest reported engagement in offending behaviour. From Figure 1, it can be seen that participants who indicated yes to engaging in offending behaviour within the past three months, were most likely to steal from an individual and shoplift. In contrast, solicitation, criminal damage, public order offences and theft of a vehicle were activities that participants were least likely to engage in. It should be noted that

solicitation is not clearly defined in the MAP itself, however, Parpouchi et al.'s (2016) research discusses sexual activity in relation to solicitation when discussing the MAP.

Figure 1

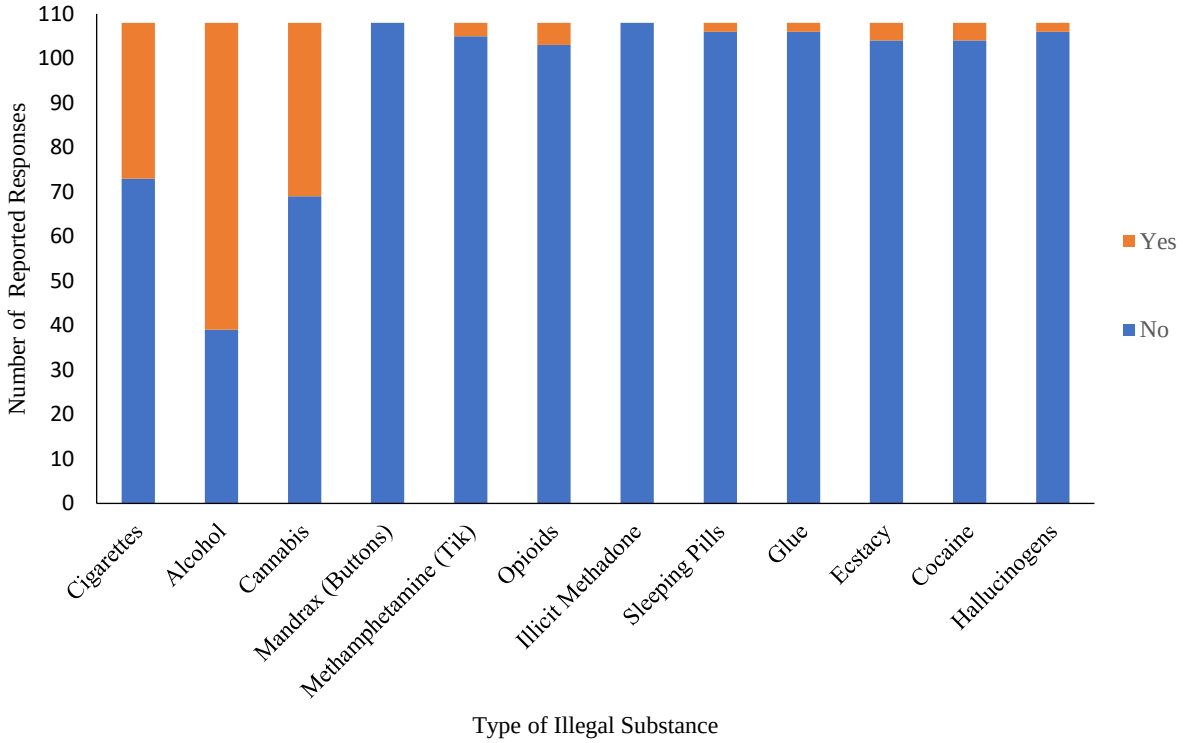
Participants' Reports of Engaging in Offending Behaviour (Measured by the MAP; N=108)



Out of the 108 participants, when asked to report on ever using illegal substances, approximately 70% (*n* = 76/108) of participants reported that they had used an illegal substance. Figure 2 shows that the most common illegal substances reportedly used by participants were alcohol, cannabis, cigarettes and opioids, while mandrax and methadone were not consumed by any participants according to their self-reports.

Figure 2

Participants' Reported Use of Illegal Substances During One's Lifetime (Measured by the ASSIST; N=108)



Exposure to Community Violence

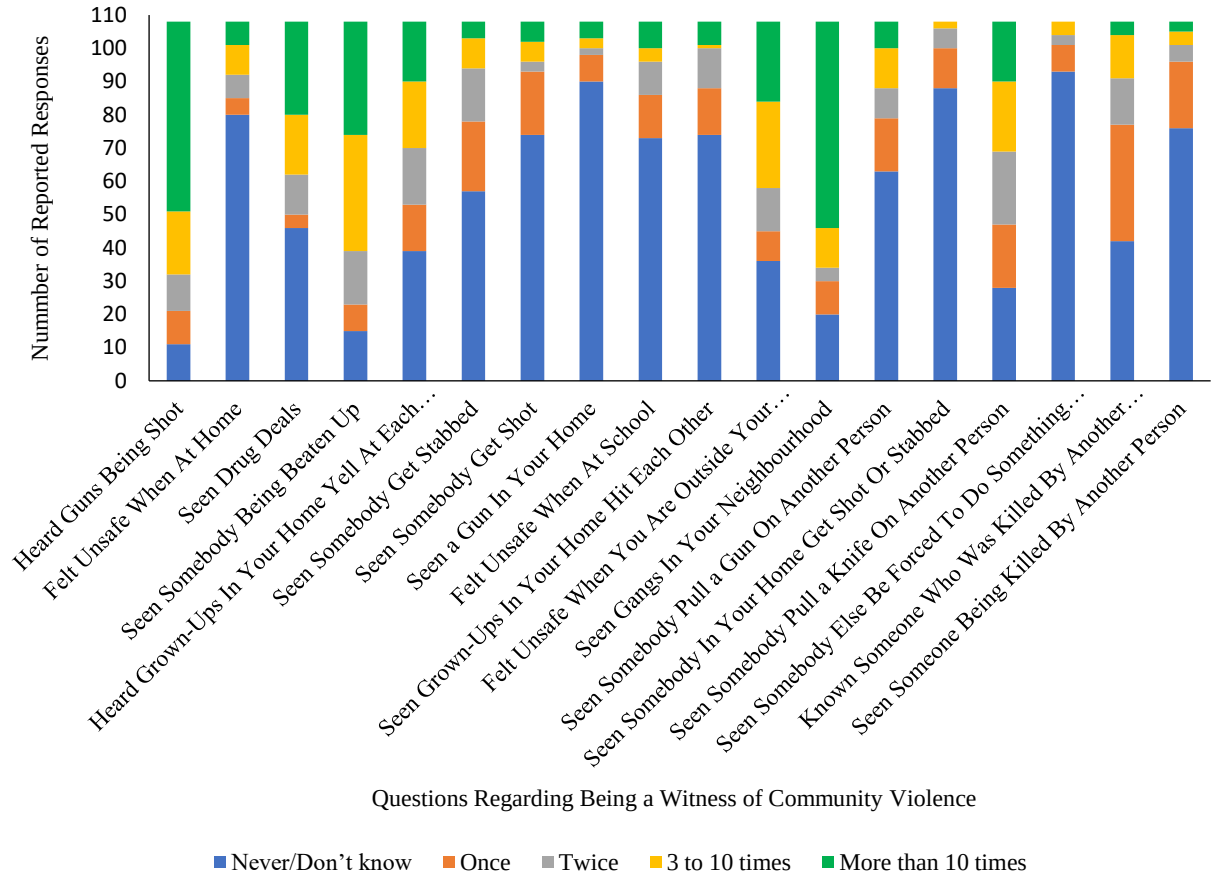
Witness

Figure 3 shows how often each incident type of community violence was witnessed and reported by participants. Further, the most common incidences of community violence witnessed more than twice by individual participants is worth noting: approximately 80% (*n* = 87/108) of participants reported hearing gunshots, about 79% (*n* = 85/108) of participants reported seeing another individual being physically beaten, and approximately 72% (*n* = 78/108) of participants reported seeing gangs in their community.

In contrast, the least reported incidences of community violence witnessed by individual participants were having ever seen someone forced to do something with their private parts they did not want to do, reported by roughly 14% (*n* = 15/108) of participants, and seeing a gun within their home, reported by approximately 17% (*n* = 18/108) of participants

Figure 3

Participants' Reported Responses of Witnessing Community Violence (measured by the CECV; N=108)



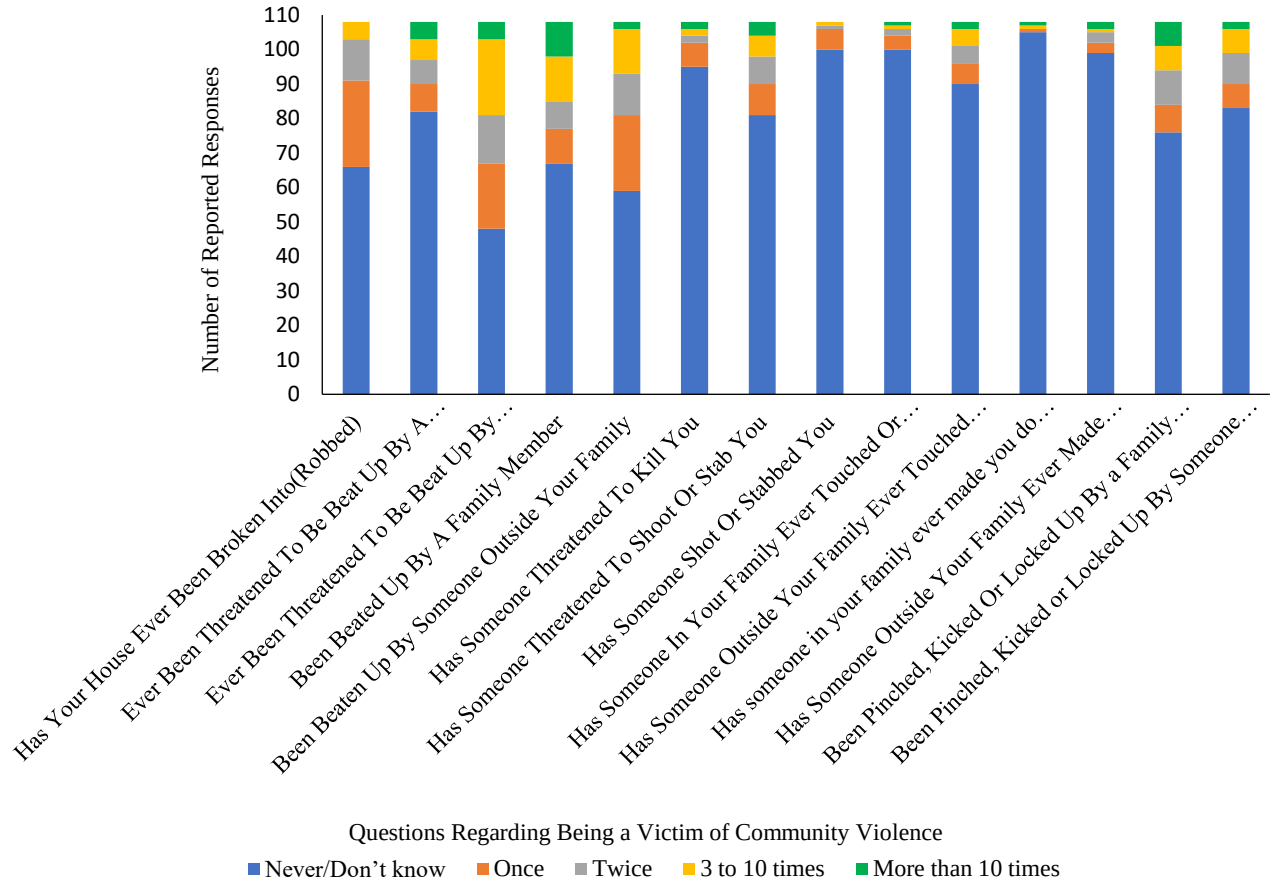
Victim

Figure 4 shows that the most common reported incidences of victimization were approximately 38.9% (*n* = 42/108) of participants being a victim of house robbery, and approximately 55.6% (*n* = 60/108) of participants being verbally threatened with physical harm by another individual (who is not a family member).

Conversely, the least reported incidences of community violence victimization experienced by participants were having someone in their family ever make them do something with their private parts that they did not want to do, reported by approximately 2.8% (*n* = 3/108) of participants and being shot or stabbed, reported by about 7.4% (*n* = 8/108) of participants.

Figure 4

Participants' Reported Responses to Being a Victim of Community Violence (Measured by the CECV; N=108)



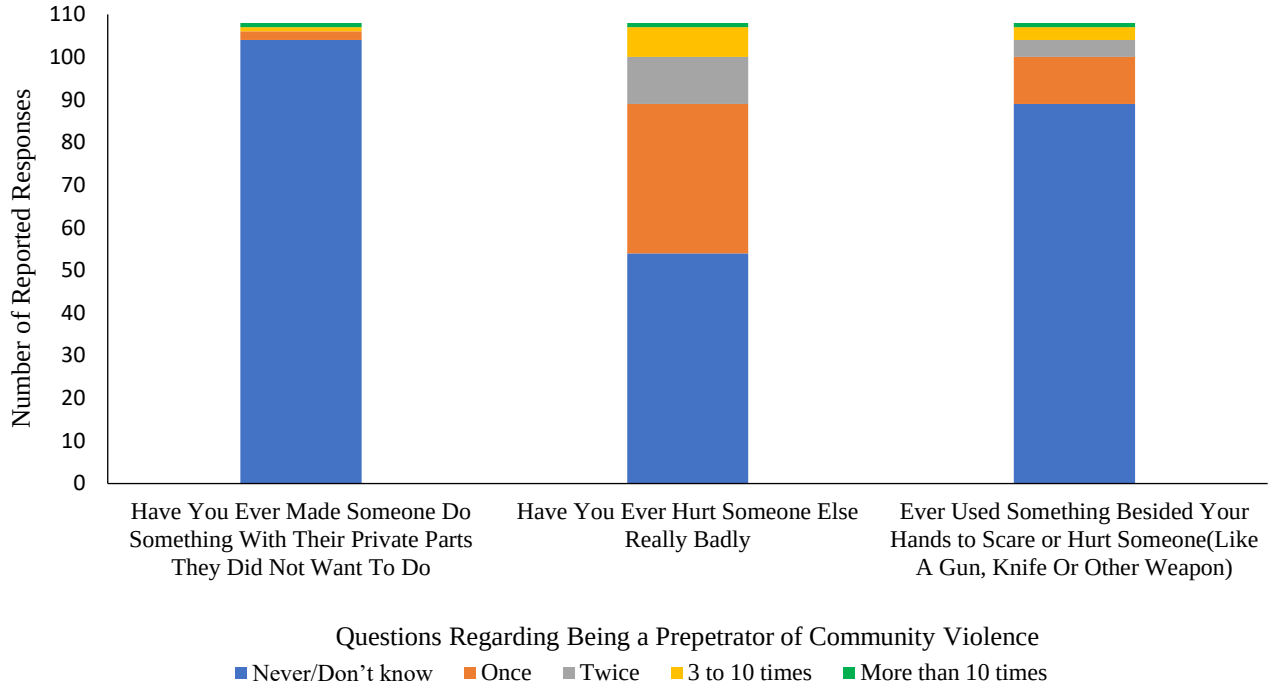
Perpetrator

Figure 5 displays reported incidences of perpetrating community violence. Figure 5 shows that 50% (*n* =54/108) of participants reported having hurt another individual 'really badly' (including both sexual and/or physical violence); this was the most common reported act of perpetration of community violence.

On the other hand, the least reported act of perpetration of community violence by participants was making someone do something with their private parts that they did not want to do, reported by approximately 3.7% (*n*=4/108) of participants.

Figure 5

Participants' Reported Responses to Being a Perpetrator of Community Violence (Measured by the CECV; N=108)



Univariate Analyses

Table 3 displays correlations carried out to assess whether age and the AUDIT (alcohol use) needed to be controlled for each of the emotional and behavioural measures of depression, aggression, callous-unemotional traits and internalizing and externalizing behaviours, when running the regression analyses. Research trends suggest that adolescence is a period of heightened vulnerability to engage in risk-taking behaviours including alcohol use (Ozer et al., 2017; Voisin et al., 2016). As a result, alcohol use and age could act as possible confounding variables.

Table 3 shows that there are weak significant correlations between age and RPQ RA, RPQ Total, AUDIT, CECV Total, CBCL Anxious/Depressed, CBCL Withdrawn /Depressed, CBCL Rule Breaking, CBCL Internalizing Total and CBCL Externalizing Total. As these

correlation coefficients are positive, it suggests that older participants are more likely to report greater alcohol use, reactive aggression, both internalizing and externalizing behaviours and greater exposure to community violence. There were no significant correlations between age and BDI-II, RPQ RA, ICU, CBCL Somatic Complaints and CBCL Aggression subscales.

Table 3 also shows that the AUDIT (alcohol use) had weak to moderate significant positive correlations with all of the measures except the ICU. In other words, as participants' intake of alcohol increases, they are more likely to report greater levels of depressive symptoms, aggression, both internalizing and externalizing behaviours and report higher levels of exposure to community violence.

Table 3

Correlations for Age and the AUDIT (Alcohol Use) with Emotional and Behavioural Measures (Univariate Analyses)(N=102)

	BDI-II	RPQ PA	RPQ RA	RPQ Total	ICU[a]	AUDIT	CECV Total	CBCL Anxious/ Depressed[b]	CBCL Withdrawn/D epressed[b]	CBCL Somatic Complaints[b]	CBCL Rule Breaking[b]	CBCL Aggression [b]	CBCL INT Total[b]	CBCL EXT Total[b]
Age	.097	.147	.218*	.206*	.003	.440**	.346**	.180*	.286**	.026	.349**	.138	.223*	.288**
AUDIT	.305**	.482**	.416**	.495**	.100	1	.522**	.303**	.367**	.159*	.513**	.383**	.335*	.454**

Note. BDI-II = Becks Depression Inventory Second Edition; RPQ PA= Reactive Proactive Aggression Questionnaire – Proactive Aggression Subscale; RPQ RA= Reactive Proactive Aggression Questionnaire – Reactive Aggression Subscale; RPQ Total = Reactive Proactive Aggression Questionnaire; ICU = Inventory of Callous-Unemotional Traits; AUDIT = Alcohol Use Disorder Identification Test; CECV Total = Child Exposure to Community Violence; CBCL INT Total = Child Behaviour Checklist –Internalizing Problems Scale; CBCL EXT Total = Child Behaviour Checklist – Externalizing Problems Scale.

[a] Data for 2 participants for the ICU are missing as the participants did not complete the measure. [b] Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.

*$p < .05$ **$p < .001$.

Table 4 shows the *t*-tests carried out with reports of alcohol and substance use (yes/no) being the grouping variable. The aim of these analyses was to assess whether the ASSIST needed to be controlled for each of the emotional and behavioural measures when running the regression analyses, as research suggests that the risk of substance and alcohol use is likely to occur during adolescence and is further exacerbated by exposure to community violence (Lofving-Gupta et al., 2018; Stansfeld et al., 2017); consequently, alcohol and substance can be considered confounding variables. When grouping participants into those who reported alcohol and substance use and those who did not, approximately 70.4% (*n*=76/108) of participants reported using substances and alcohol. Further, when grouping participants into those who reported substance and alcohol use and participants who did not, those who reported yes to engaging in substance and alcohol use also reported significantly higher median scores for aggression, anxious/depressed symptoms, withdrawn/depressed symptoms and rule breaking behaviour. This suggests that participants who reported alcohol and substance use were more likely to exhibit internalizing and externalizing behaviours compared to participants who reported no alcohol and substance use.

Table 4

Between-Group Comparisons for Behavioural and Emotional Measures with Substance Use as the Grouping Variable (N=102)

	ASSIST		*U*	*p*
	Yes	No		
BDI-II	14 (9.57 – 20)	11.50 (8 – 15)	845	.019
RPQ PA	3 (1 -5)	1 (0 -2.75)	778.5	.005*
RPQ RA	9 (6 -12)	5.50 (5 -8)	734	.002*
RPQ TOTAL	11 (7.75 – 17.25)	7 (5 – 11)	688	.001**
ICU[a]	22 (16 -27)	21 (18 -27)	1098	.812
CBCL Anxious/depressed[b]	62 (57 – 69)	55.50 (50 – 61.50)	667.5	<.001**
CBCL Withdrawn/depressed[b]	64 (57 -70)	57 (54- 62.25)	692	.001**
CBCL Somatic Complaints[b]	61 (55 – 67)	55 (51 -64)	841	.018
CBCL Rule Breaking[b]	60 (53 -66.50)	50 (50 – 55.25)	515.5	<.001**
CBCL Aggressive[b]	56 (51- 61)	50.50 (50 -57.50)	793	.006*
CBCL Internalizing Problems[b]	63.50 (59- 71.25)	57.50 (48.50 – 63.50)	642	<.001**
CBCL Externalizing Problems[b]	58 (51 -65)	48 (37.75 – 54.50)	566.5	<.001**

Note. Above table displays median yes or no responses from participants. Values in parenthesis indicates the inter-quartile range of scores for each measure. *U* = Mann-Whitney *U* test.

[a] Data for 2 participants for the ICU are missing as the participants did not complete the measure. [b] Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.

*$p < .05$ **$p < .001$.

Table 5 displays the *t*-tests carried out with reports of engaging in offending behaviour (yes/no) being the grouping variable. The aim of these analyses was to assess whether the MAP needed to be controlled for each of the emotional and behavioural measures when running the regression analyses. Research indicates that engaging in offending behaviours are likely to occur during adolescence and may also be viewed as overlapping with perpetrating community

violence due to the similarities of behaviours enacted including physical assault (Herrman & Silverstein, 2012; Sui et al., 2020). When grouping participants into those who reported engaging in offending behaviour and participants who did not, roughly 75.9% (*n*=82/108) of participants reported partaking in offending behaviour. Moreover, those who reported engaging in offending behaviours also reported significantly higher median scores for reactive and proactive aggression, anxious/depressed symptoms, withdrawn/depressed symptoms, and rule breaking behaviour. These results indicate that participants who reported partaking in offending behaviours were more likely to display externalizing and internalizing behaviours in comparison to participants who reported no engagement in offending behaviours.

Table 5

Between-Group Comparisons for Behavioural and Emotional Measures with Offending Behaviour as the Grouping Variable (N=102)

	MAP		*U*	*p*
	Yes	No		
BDI-II	16 (10 -23.50)	12 (9-17)	831	.091
RPQ PA	3.50 (2 -7.25)	2 (0 – 3.25)	624.5	.001**
RPQ RA	9.50 (6 – 15)	7 (5 -11)	653	.003*
RPQ TOTAL	14 (8.75 – 20.25)	9 (6 – 12)	614.5	.001**
ICU[a]	22.50 (16.75 -26.25)	20.50 (17 – 27)	950	.508
CBCL Anxious/Depressed[b]	62 (60 -67.50)	60 (51.75 – 64)	726	.014*
CBCL Withdrawn/Depressed[b]	64 (57 – 70)	60 (54 – 65)	824	.080
CBCL Somatic Complaints[b]	59.50 (54.25 -64)	58 (52 – 67)	983	.549
CBCL Rule Breaking[b]	64 (56 -70.50)	53 (50- 62)	593.5	<.001*
CBCL Aggressive[b]	58 (51.75 – 63.75)	52 (50 – 58.50)	713	.010*
CBCL Internalizing Problems[b]	65 (60 – 71.50)	61 (53.75 – 66)	761	.028*
CBCL Externalizing Problems[b]	62.50 (54.50 – 69)	53 (46 – 60)	561	<.001**

Note. Above table displays median yes or no responses from participants Values in parenthesis indicates the inter-quartile range of scores for each measure. *U* = Mann-Whitney *U* test.

[a] Data for 2 participants for the ICU are missing as the participants did not complete the measure. [b] Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.

*$p < .05$ **$p < .001$.

Multiple Regression Analyses

Internalizing Behaviours: Depressive Symptoms (Measured by the BDI-II)

Table 6 shows that while controlling for alcohol and substance use (AUDIT and ASSIST; respectively), CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the

outcome variable which is depressive symptoms. Exposure to community violence (CECV) total (R^2 = .20, F (3, 105) = 8.66, p <.001), being a victim (R^2 = .20, F (3, 105) = 8.70, p <.001), witness (R^2 =.18, F (3,105) = 7.27, p <.001), and perpetrator (R^2= .14, F (3, 102) = 5.68, p <.001) of community violence were significant predictors of depressive symptoms, after controlling for AUDIT and ASSIST. Higher scores for exposure to community violence (CECV total) and its subcategories (CECV witness, CECV victim and CECV perpetrator) predicted higher levels of depressive symptoms.

Internalizing Behaviours: Internalizing Problems (Measured by the CBCL)

Table 7 shows that while controlling for age, offending behaviour (MAP), substance and alcohol use (ASSIST and AUDIT, respectively), CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is internalizing problems (in terms of the syndrome grouping). Exposure to community violence (CECV) total (R^2 = .30, F (5, 101) = 8.20, p <.001), being a witness (R^2 =.27, F (5, 101) = 7.21, p <.001), and victim (R^2= .28, F (5, 101) = 7.54, p <.001) of community violence were significant predictors of internalizing problems, after controlling for age, the MAP, ASSIST and AUDIT. Higher scores for exposure to community violence (CECV total) and its subcategories (CECV witness and CECV victim) predicted higher levels of internalizing problems. Additionally, the ASSIST was a significant predictor of internalizing problems. Notably, the Beta (β) coefficient for the ASSIST is significant for the regression model predicting CECV victim and the coefficient is relatively greater in magnitude in comparison to the other β coefficients in table. It should be noted that being a perpetrator of community violence was not a significant predictor of internalizing problems.

Table 6

Regression Analysis Exposure to Community Violence (CECV total) and its Sub-categories (CECV victim, CECV witness and CECV perpetrator) as Predictors of Depression (BDI-II) (N=108)

		Model Statistics			Coefficients				
		R^2	*F*(df)	*p*	B	SE	Beta	t	*p*
BDI-II		18%	8.66 (3, 105)	< .001**					
	Constant				7.73	1.7	-	4.55	< .001**
	AUDIT				.10	.16	.07	.64	.524
	ASSIST				.91	1.96	.05	.47	.642
	CEVE Total				.16	.05	.39	3.61	< .001**
BDI-II		18%	8.70 (3, 105)	< .001**					
	Constant				9.52	1.48	-	6.42	< .001**
	AUDIT				.16	.16	.11	1.01	.313
	ASSIST				1.78	1.91	.09	.93	.354
	CECV Victim				.44	.12	.35	3.62	< .001**
BDI-II		15%	7.27 (3, 105)	< .001**					
	Constant				7.92	1.78	-	4.44	< .001
	AUDIT				.17	.16	.11	1.05	.296
	ASSIST				1.01	2.00	.06	.54	.588
	CECV Witness				.23	.08	.32	3.05	.003*
BDI-II		12%	5.68 (3, 105)	.001*					
	Constant				10.42	1.5	-	6.93	<.001**
	AUDIT				.25	.16	.17	1.54	.126
	ASSIST				2.29	1.98	.12	1.16	.250
	CECV Perpetrator				1.27	.57	.22	2.24	.028*

Note. BDI-II = Becks Depression Inventory Second Edition; AUDIT = Alcohol Use Disorder Identification Test; ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; CECV Total = Child Exposure to Community Violence.

*$p < .05$ **$p < .001$.

Table 7

Regression Analysis Showing Predictors of Internalizing Problems Measured by the CBCL (N=104)

		Model Statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
Internalizing Problems		29.9%	8.20 (5, 101)	<.001**					
	Constant				55.50	9.06	-	6.13	<.001**
	AUDIT				.00	.19	.00	.01	.993
	ASSIST				4.43	2.23	.20	1.98	.050
	MAP				.42	2.23	.02	.19	.850
	Age				-.33	.63	-.05	-.53	.596
	CECV Total				.22	.05	.44	4.12	<.001**
Internalizing Problems		23.5%	7.21(5,101)	<.001**					
	Constant				54.68	9.24	-	5.92	<.001**
	AUDIT				.07	.19	.04	.34	.733
	ASSIST				4.53	2.28	.21	1.99	.050
	MAP				.85	2.26	.04	.38	.709
	Age				-.26	.64	-.04	-.41	.684
	CECV Witness				.32	.09	.38	3.59	.001**
Internalizing Problems		28.2%	7.54 (5, 101)	<.001**					
	Constant				54.82	9.18	-	5.97	<.001**
	AUDIT				.12	.19	.07	.64	.525
	ASSIST				5.20	2.23	.24	2.33	.022*
	MAP				1.3	2.22	.05	.59	.555
	Age				-.12	.63	-.11	-.19	.850
	CECV Victim				.58	.15	.36	3.77	<.001**

Note. AUDIT = Alcohol Use Disorder Identification Test; ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; MAP = Maudsley Addiction Profile; Internalizing Problems = Child Behaviour Checklist –Internalizing Problems Scale; CECV Total = Child Exposure to Community Violence.

Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.

*$p < .05$ **$p < .001$.

Internalizing Behaviours: CBCL Internalizing Problems Sub-Scales

Table 8 displays the regression analyses for the CBCL internalizing problems sub-scales, namely, anxious/depressed, withdrawn/depressed and somatic complaints.

While controlling for offending behaviour (MAP), alcohol (AUDIT) and substance use (ASSIST), CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is the anxious/depressed sub-scale. Exposure to community violence (CECV) total (R^2 = .26, F (4, 101) = 8.43, p <.001), being a witness (R^2 = .20, F (4, 101) = 7.33, p <.001) and victim (R^2 = .26, F (4, 101) = 8.56, p <.001) of community violence were significant predictors of anxious/depressed behaviour, after controlling for the MAP, AUDIT and ASSIST. Higher scores for exposure to community violence (CECV total) and its two subcategories (CECV witness and CECV victim) predicted higher levels of anxious/depressed symptoms. Notably, CECV perpetrator was not a significant predictor.

While controlling for the AUDIT and ASSIST, CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is the withdrawn/depressed sub-scale. Exposure to community violence (CECV) total (R^2 = .31, F (3, 101) = 14.57, p <.001), being a witness (R^2 = .26, F (3, 101) = 11.69, p <.001), perpetrator (R^2 = .24, F (3, 101) = 10.50, p <.001), and victim (R^2 = .29, F (3, 101) = 13.19, p <.001) of community violence were significant predictors of withdrawn/depressed symptoms after controlling for AUDIT and ASSIST. Higher scores for exposure to community violence (CECV total) and its subcategories (CECV witness, CECV victim and CECV perpetrator) predicted higher levels of withdrawn/depressed behaviour.

While controlling for the AUDIT, CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is the somatic complaints sub-scale. Exposure to community violence (CECV) total (R^2 = .09, F (2, 101) = 4.96, p = .009), being a witness (R^2 = .09, F (2, 101) = 4.87, p = .010), and victim of (R^2 = .08, F (2, 101 =, 4.50, p = .013) of community violence were significant predictors of somatic complaints after controlling for the AUDIT. Higher scores for exposure to community violence (CECV total) and its two

subcategories (CECV witness and CECV victim) predicted higher levels of somatic complaints. Notably, CECV perpetrator was not a significant predictor.

Table 8

Regression Analyses Showing Predictors of Internalizing Behaviour Sub-Scales Outcomes (CBCL)(N=104)

		Model Statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
CBCL Anxious/Depressed		22.7%	8.43 (4, 101)	<.001**					
	Constant				51.84	1.74	-	29.7	<.001**
	AUDIT				-.051	.17	-.03	-.30	.768
	ASSIST				2.56	2.01	.13	1.3	.206
	MAP				.20	2.06	.01	.10	.923
	CECV Total				.21	.05	.45	4.2	<.001**
CBCL Anxious/Depressed		20%	7.33 (4, 101)	<.001**					
	Constant				52.01	1.82	-	28.6	<.001**
	AUDIT				.01	.17	.01	.05	.958
	ASSIST				2.70	2.05	.14	1.3	.191
	MAP				.58	2.08	.03	.28	.780
	CECV Witness				.29	.08	.39	3.68	<.001**
CBCL Anxious/Depressed		23%	8.56 (4, 101)	<.001**					
	Constant				53.87	1.52	-	35.50	<.001**
	AUDIT				.053	.17	.03	.32	.748
	ASSIST				3.36	1.97	.17	1.7	.092
	MAP				.95	2.02	.04	.47	.641
	CECV Victim				.59	.14	.40	4.22	<.001**
CBCL Withdrawn/Depressed		28.7%	14.57 (3,101)	<.001**					
	Constant				52.68	1.67	-	31.62	<.001**
	AUDIT				.09	.166	.05	.51	.611
	ASSIST				1.75	1.91	.09	.92	.360
	CECV Total				.22	.05	.48	4.76	<.001**
CBCL Somatic Complaints		7.3%	4.96 (2.101)	.009*					
	Constant				55.29	1.92	-	28.76	<.001**
	ASSIST				1.99	2.12	.10	.94	.349
	CECV total				.11	.05	.25	2.30	.024*
CBCL Somatic Complaints		7.1%	4.87 (2, 101)	.010*					
	Constant				55.15	1.97	-	27.97	<.001**
	ASSIST				2.07	2.11	.10	.98	.328
	CECV Witness				.18	.08	.24	2.26	.026*

		Model Statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
CBCL Somatic Complaints		6.5%	4.50 (2, 101)	.013*					
	Constant				56.54	1.70	-	33.32	<.001**
	ASSIST				2.87	2.00	.14	1.43	.155
	CECV Victim				.32	.15	.21	2.10	.038*

Note. AUDIT = Alcohol Use Disorder Identification Test; ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; MAP = Maudsley Addiction Profile; CECV Total = Child Exposure to Community Violence.

Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.

*$p < .05$ **$p < .001$.

Externalizing Behaviours: Reactive and Proactive Aggression (Measured by the RPQ)

Table 9 shows the regression analyses conducted to assess whether exposure to community violence predicts reactive and/or proactive aggression, which are both sub-scales of the RPQ.

While controlling for the offending behaviour (MAP), alcohol and substance use (AUDIT and ASSIST, respectively), CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is proactive aggression (RPQ PA). Being a perpetrator (R^2 =.39, F (4,105) = 16.32, p <.001) of community violence was a significant predictor of proactive aggression, after controlling for the MAP, AUDIT and ASSIST. Higher scores for perpetrating community violence predicted higher levels of proactive aggression. In addition, the AUDIT and MAP were significant predictors of proactive aggression. It should be noted that CECV total and being witness or victim community violence were not significant predictors of proactive aggression.

While controlling for age, the MAP, AUDIT and ASSIST, CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is reactive aggression (RPQ RA). Exposure to community violence (CECV) total (R^2 =.27, F (5,105) = 7.33, p = <.001), being a perpetrator (R^2 =.31, F (5,105) = 9.03, p <.001) and a victim (R^2 =.28, F (5,105) =7.59, p <.001) of community violence were significant predictors of reactive aggression after controlling for age, the MAP, AUDIT and ASSIST. Higher scores for exposure community violence (CECV total) and its two subcategories (CECV perpetrator and CECV victim) predicated higher levels of reactive aggression. In addition, the AUDIT is a significant predictor of reactive aggression. It is worth noting that being a witness of community violence was not a significant predictor of reactive aggression. Further, it is worth highlighting that the significant Beta (β) coefficients for the AUDIT and MAP has a relatively greater magnitude to the other β coefficients across the regression models.

Table 9

Regression Analyses Showing Exposure to Community Violence (CECV Total) and its Sub-categories (CECV perpetrator and CECV victim) as Predictors of Reactive and Proactive Aggression (N=108)

		Model Statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
RPQ PA		36.9%	16.32 (4,105)	<.001**					
	Constant				.78	.51	-	1.52	.132
	AUDIT				.19	.05	.32	3.56	.001*
	ASSIST				-.16	.68	-.02	-.23	.818
	MAP				1.97	.67	.24	2.93	.004*
	CECV Perpetrator				.79	.19	.34	4.08	<.001**
RPQ RA		23.2%	7.33(5,105)	<.001**					
	Constant				6.09	3.40	-	1.79	.076
	AUDIT				.16	.01	.23	2.07	.041*
	ASSIST				.53	.92	.06	.58	.565
	MAP				1.56	.89	.16	1.77	.080
	Age				-.08	.24	-.03	-.34	.738
	CECV Total				.05	.02	.27	2.53	.013*
RPQ RA		27.7%	9.03 (5, 105)	<.001**					
	Constant				7.27	3.31	-	2.20	.030*
	AUDIT				.17	.07	.25	2.42	.018*
	ASSIST				.82	.88	.09	.94	.349
	MAP				1.76	.85	.18	2.07	.041*
	Age				-.12	.23	-.05	-.52	.604
	CECV Perpetrator				.88	.24	.32	3.61	<.001**
RPQ RA		23.9%	7.59 (5,105)	<.001**					
	Constant				7.00	3.39	-	2.06	.042*
	AUDIT				.17	.07	.25	2.35	.021*
	ASSIST				.79	.90	.09	.87	.385
	MAP				1.72	.87	.18	1.97	.052
	Age				-.10	.24	-.04	-.44	.658
	CECV Victim				.15	.06	.26	2.73	.008*

Note. RPQ RA = Reactive Proactive Questionnaire – Reactive aggression sub-scale. RPQ PA = Reactive Proactive Questionnaire – Proactive aggression sub-scale; AUDIT = Alcohol Use Disorder Identification Test; ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; MAP = Maudsley Addiction Profile; CECV Total = Child Exposure to Community Violence

*$p < .05$ **$p < .001$.

Externalizing Behaviours: Externalizing Problems (Measured by the CBCL)

Table 10 shows that while controlling for age, alcohol and substance use (AUDIT and ASSIST, respectively) and offending behaviour (MAP), CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is externalizing problems (in terms of the syndrome grouping). Exposure to community violence (CECV) total (R^2 =.34, F (5, 101) =10.01, p <.001), being a witness (R^2 =.33, F (5, 101) = 9.46, p <.001), perpetrator (R^2 =.38, F (5, 101) = 11.82, p <.001) and victim (R^2 =.32, F (5, 101) =9.20, p <.001) of community violence were significant predictors of externalizing problems, after controlling for age, the MAP, AUDIT and ASSIST. Higher scores for exposure to community violence (CECV total) and its subcategories (CECV witness, CECV victim and CECV perpetrator) predicted higher levels of externalizing problems. In addition, the ASSIST and MAP are significant predictors of externalizing problems. Further, it should be noted that the significant Beta (β) coefficients for the ASSIST and MAP has a relatively greater magnitude to the other β coefficients in the regression models.

Table 10

Regression Analyses for Externalizing Problems Measured by the CBCL (N=104)

		Model statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
Externalizing Problems		34.3%	10.01 (5,101)	< .001**					
	Constant				46.96	9.46	-	4.96	< .001**
	AUDIT				.30	.20	.15	1.48	.142
	ASSIST				4.53	2.33	.19	1.94	.055
	MAP				4.94	2.33	.19	2.12	.036*
	Age				-.25	.65	-.04	-.38	.703
	CECV Total				.16	.06	.29	2.80	.006*
Externalizing Problems		29.5%	9.46 (5, 101)	< .001**					
	Constant				46.40	9.56	-	4.85	< .001**
	AUDIT				.34	.20	.18	1.73	.087
	ASSIST				4.62	2.36	.20	1.96	.053
	MAP				5.27	2.34	.20	2.25	.027*
	Age				-.20	.66	-.03	-.30	.766
	CECV Witness				.22	.09	.24	2.42	.017*
Externalizing Problems		34.9%	11.82 (5,101)	< .001**					
	Constant				49.62	9.18	-	5.40	< .001**
	AUDIT				.35	.18	.18	1.91	.059
	ASSIST				5.38	2.22	.23	2.42	.017*
	MAP				5.53	2.21	.21	2.50	.014*
	Age				-.31	.63	-.04	-.48	.632
	CECV Perpetrator				2.42	.64	.32	3.78	< .001**
Externalizing Problems		28.9%	9.20 (5, 101)	< .001**					
	Constant				46.66	9.60	-	4.86	< .001**
	AUDIT				.39	.19	.20	2.03	.045*
	ASSIST				5.17	2.34	.22	2.22	.029*
	MAP				5.70	2.32	.22	2.45	.016*
	Age				-.10	.66	-.01	-.15	.882
	CECV Victim				.36	.16	.20	2.22	.029*

Note. AUDIT = Alcohol Use Disorder Identification Test; ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; MAP = Maudsley Addiction Profile; CECV Total = Child Exposure to Community Violence.
Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.
*$p < .05$ **$p < .001$.

Externalizing Behaviours: CBCL Externalizing Problems Sub-Scales

Table 11 displays the regression analyses conducted to assess if exposure to community violence predicts the externalizing problems sub-scales (measured by CBCL), namely, rule breaking and aggression.

While controlling for age, offending behaviour (MAP), alcohol and substance use (AUDIT and ASSIST, respectively), CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is rule breaking. Exposure to community violence (CECV) total (R^2 =.38, F (5, 101) = 11.90, p <.001), being a witness (R^2 =.38, F (5, 101) =11.83, p <.001) and perpetrator (R^2 = .48, F (5, 101) = 17.41, p <.001) of community violence were significant predictors of rule breaking behaviour, after controlling for age, the ASSIST, MAP and AUDIT. Higher scores for exposure to community violence (CECV total) and its two subcategories (CECV witness and CECV perpetrator) predicted higher levels of rule breaking behaviour. In addition, the MAP and AUDIT were significant predictors of rule breaking behaviour. It should be noted that being a victim of community violence was not a significant predictor of rule breaking behaviour. Moreover, the significant Beta (β) coefficients for the AUDIT and MAP has a relatively greater magnitude to the other β coefficients across the regression models.

While controlling for the MAP, AUDIT and ASSIST, CECV total and its subcategories (CECV witness, CECV victim and CECV perpetrator) were used as predictors in the regression analyses to measure the effect on the outcome variable which is aggression. Exposure to community violence (CECV) total (R^2 =.17, F (4, 101) = 5.00, p = .001), being a victim (R^2 = .19, F (4, 101) = 5.79, p <.001) and perpetrator (R^2 = .21, F (4, 101) = 6.28, p <.001) of community violence were significant predictors of aggression, after controlling for the ASSSIT, AUDIT and MAP. Higher scores for exposure to community violence (CECV total) and its two subcategories (CECV victim and CECV perpetrator) predicted higher levels of aggression. It is worth noting that being a witness of community violence is not a significant predictor of aggression.

Table 11

Regression Analyses for Sub-Scales of Externalizing Problems, Rule Breaking and Aggression, Measured by the CBCL (N=104)

		Model Statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
CBCL Rule Breaking		35%	11.88 (5, 101)	<.001**					
	Constant				45.70	7.04	-	6.63	<.001**
	ASSIST				1.66	1.74	.09	.96	.340
	Age				.26	.49	.05	.53	.600
	AUDIT				.40	.148	.27	2.69	.008*
	MAP				5.14	1.73	.25	2.97	.004*
	CECV total				.09	.04	.22	2.22	.028*
CBCL Rule Breaking		34.9%	11.83 (5, 101)	<.001**					
	Constant				46.26	7.06	-	6.55	<.001**
	ASSIST				1.63	1.74	.09	.94	.352
	Age				.28	.49	.05	.58	.566
	AUDIT				.42	.146	.28	2.85	.005*
	MAP				5.24	1.73	.26	3.04	.003*
	CECV Witness				.15	.07	.21	2.19	.031*
CBCL Rule Breaking		44.8%	17.41 (5,101)	<.001**					
	Constant				48.80	6.49	-	7.52	<.001**
	ASSIST				2.03	1.57	.11	1.29	.200
	Age				.16	.44	.03	.36	.722
	AUDIT				.39	.13	.26	2.99	.004*
	MAP				5.20	1.56	.26	3.33	.001*
	CECV				2.17	.45	.38	4.79	<.001**
	Perpetrator								
CBCL Aggression		13.7%	5 (4,101)	.001**					
	Constant				51.21	1.43	-	35.80	<.001**
	ASSIST				.38	1.65	.03	.23	.819

		Model Statistics			Coefficients				
		R^2	*F* (df)	*p*	B	SE	Beta	*t*	*p*
	AUDIT				.19	.14	.15	1.36	.178
	MAP				2.21	1.69	.13	1.31	.193
	CECV Total				.08	.04	.24	2.10	.039*
CBCL Aggression		17.3%	6.28 (4, 101)	<.001**					
	Constant				52.19	1.18	-	44.37	<.001**
	ASSIST				.79	1.58	.05	.50	.617
	AUDIT				.22	.13	.17	1.64	.103
	MAP				2.49	1.61	.15	1.54	.126
	CECV				1.38	.47	.29	2.97	.004*
	Perpetrator								
CBCL Aggression		19.3%	5.79 (4, 101)	<.001**					
	Constant				51.83	1.23	-	42.19	<.001**
	ASSIST				.59	1.60	.04	.37	.711
	AUDIT				.22	.13	.17	1.64	.105
	MAP				2.39	1.64	.14	1.46	.147
	CECV Victim				.30	.11	.27	2.67	.009*

Note. ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; AUDIT = Alcohol Use Disorder Identification Test; MAP = Maudsley Addiction Profile; CECV Total = Child Exposure to Community Violence.

Data for 4 participants for the CBCL are missing as participants were over the age limit for the measure.

*$p < .05$ **$p < .001$.

Discussion

There is a large body of literature which suggests that exposure to community violence is a global issue and poses both social and mental health challenges, which are likely to be exacerbated in countries with high rates of violence and crime, such as SA (Cooley-Strickland et al., 2009; Ransford & Slutkin, 2017; Voisin et al., 2016; WHO, 2014; Woods-Jaeger et al., 2019; Wright et al., 2017). As community violence appears to have such a significant impact on SA youth, it is considered a public health issue, which requires understanding and intervention. There is a dearth of research in both international and local literature, focused on male youth who are witnesses, victims, and/or perpetrators of community violence in relation to internalizing and externalizing behaviours and callous-unemotional traits. Previous literature does not separate exposure to community violence into these three different levels (witness, victim and/or perpetrator) in relation to the above-mentioned outcome variables and to male youth.

This study therefore aimed to investigate the association between exposure to community violence, callous-unemotional traits, and internalizing and externalizing behaviours in a sample of SA male youth. Further, I hypothesized that callous-unemotional traits and internalizing and externalizing behaviours would be higher in SA male youth who have greater exposure to community violence on three levels, namely, as a witness, victim and/or perpetrator. While it is known that exposure to community violence is associated with internalizing and externalizing behaviours (Elsaesser et al., 2020; Heleniak et al., 2018; Schwab-Stone et al., 2013), arguably research exploring this relationship to both callous-unemotional traits and being a perpetrator of community violence using Bronfenbrenner's bioecological framework is lacking in SA literature.

Summary of Results

In terms of descriptive statistics, the most frequently reported forms of witnessing or being a victim or perpetrator of community violence was hearing gunshots, verbal threats of physical harm by an individual who was not a family member, and hurting another individual really badly (including both sexual and/or physical violence), respectively.

In terms of delinquent behaviour, just under a quarter of the sample reported participating in shoplifting and theft from another individual. A large proportion of the sample (76%) did not partake in delinquent activities. Further, approximately 70% of participants reported the use of illegal substances including alcohol, cannabis and opioids. These findings are supported by previous research (e.g., Lofving-Gupta et al., 2018; Voisin et al., 2007; Voisin et al., 2016).

In terms of age, the strongest correlations were between age and alcohol use, rule breaking behaviour and exposure to community violence, with significant positive correlations between age and alcohol use and rule breaking behaviours. Research suggests that in instances where youth are exposed to experiences of maltreatment by their parents within the home and exposure to community violence, this may impact on the development of effective coping mechanisms (Finkelhor et al., 2015: Milojevich et al., 2018; Wilson et al., 2008). Exposure to community violence is perceived as a continuous source of trauma which may facilitate substance use such as alcohol consumption (Motley et al., 2017). Consequently, adolescents may develop harmful coping strategies which may be further exacerbated as adolescents become older (Milojevich et al., 2018; Snyder et al., 2016; Young et al., 2002). Research indicates that engagement in rule breaking behaviours such as alcohol consumption and truancy is often more frequent during adolescence; this may be due to adolescents frequently spending time with their peers in settings which are unsupervised and may be due to experiences of increased pressure and opportunities to engage in rule breaking behaviours (Burt, 2012; Ettekal & Ladd, 2015; van Lier et al., 2009). Further, a significant positive correlation was found between age and community violence exposure in the current study. Research with a sample of immigrant youth between the ages of 8 to 15 years, postulates that older adolescents report more experiences of community violence, such as witnessing community violence in comparison to younger adolescents and children; hence, it could be argued that as one ages there is an increased risk of being exposed to more incidences of community violence as older children and adolescents may spend more time outside the home (Jaycox et al., 2002). This is supported by a SA study which found that older youth are more vulnerable to direct assault in their community compared to younger youth (Kaminer, du Plessis, Hardy, Benjamin, 2013).

The regression analyses indicated that higher levels of reported exposure to community violence predicted greater levels of both internalizing and externalizing behaviours, which is in line with previous literature. However, in contrast to expectations, callous-unemotional traits was not significantly correlated to any of the variables in this study and this may partially be explained by the possibility that items of the ICU measure were underreported by participants. Hence, my hypothesis that callous-unemotional traits and internalizing and externalizing behaviours would be higher in SA male youth who have greater exposure to community violence on three levels, namely, as a witness, victim and/or perpetrator, was partially confirmed. I

discuss each of these main findings around internalizing, externalizing, and callous-unemotional traits in relation to exposure to community violence further below.

Internalizing Behaviours and Exposure to Community Violence

The current findings demonstrate that the internalizing behaviours syndrome grouping is significantly predicted by exposure to community violence (CECV total), being a victim and witness, but not a perpetrator, of community violence. These significant findings are in line with current literature which suggest that exposure to community violence as a witness or victim is linked to higher levels of internalizing behaviours which primarily manifest through emotional dysregulation (Fitzpatrick et al., 2005; Fowler et al., 2009; Heleniak et al., 2018). As previously discussed, youth with higher scores for internalizing behaviours usually display social withdrawal, anxiety, depressive affect, fear and excessive sadness (Achenbach & Rescorla, 2001; Durbeej et al., 2019; Eisenberg et al., 2001; Hansen & Jordan, 2017; Liu et al., 2011; Mkhize et al., 2012; Perle et al., 2013; Schwab-Stone et al., 2013).

Previous longitudinal and cross-sectional studies posit that youth who are witnesses of community violence face a higher risk for internalizing problems compared to youth with low levels of community violence exposure (Cooley-Quille et al., 2001; Rosario et al., 2008). Specifically, in comparison to youth not exposed to community violence, Schwab-Stone et al. (2013) have shown that youth who are witnesses of community violence experience higher levels of depressive symptoms and anxiety. As such, it has been argued that higher levels of exposure to community violence (in this case through witnessing such violence) coupled with feelings of lower self-worth amongst youth, may in turn exacerbate internalizing behavioural difficulties (Copeland-Linder et al., 2010).

Across sex and culture, individuals who are victims of community violence experience higher levels of internalizing behaviours including anxiety, somatic complaints, and depressive symptoms than individuals who witness community violence (Schwab-Stone et al., 2013). This may partially be explained by the fact that when an individual is a victim of community violence they may be subject to acts of violence such as physical beatings, shootings, robbery and/or stabbings and this may result in an individual fearing for their safety constantly (Fowler et al., 2009; Overstreet & Braun, 2000). Consequently, exposure to community violence, specifically victimization, increases one's vulnerability to internalizing behaviour.

Further, one possible explanation for perpetration of community violence not being a significant predictor of internalizing behaviours stems from research on bullying. For instance, in comparison to victims of violence and those who are uninvolved (not a victim or witness), youth who perpetrate violence through bullying others are more likely to have significantly higher reported scores for externalizing symptoms including aggressive and rule breaking behaviours, and victims are more likely to report higher scores for anxious/depressed symptoms, withdrawn behaviours and somatic complaints (Menesini et al., 2009). Arguably, there seems to be a difference in behaviours and emotions exhibited by youth who are victims and youth who perpetrate violence against others.

Below I discuss results for specific types of internalizing behaviours in relation to exposure to community violence. As the results show, perpetration of community violence was only a significant predictor of depressive and withdrawn/depressed symptoms, and not of the other two CBCL internalising behaviour subscales (anxious/depressed symptoms and somatic complaints), which may also explain why the syndrome grouping as a whole was not predicted by perpetration of community violence.

Depression, Anxiety and Withdrawn Behaviour and Exposure to Community Violence

The findings of the current study suggests that exposure to community violence (CECV total) significantly predicts depressive, anxious/depressed and withdrawn/depressed symptoms (in terms of these subscales on the CBCL and the BDI-II results). These findings are aligned with and support existing research which indicates that youth who are exposed to violence and community violence report higher levels of withdrawn behaviour (e.g., sadness and social withdrawal) and symptoms of depression and anxiety (Bach & Louw, 2010; Barbarin et al., 2001; Chen et al., 2017; Cooley-Quille et al., 2001; Mrug & Windle, 2010; Nothling et al., 2019; Simeonova et al., 2014; Standsfeld et al., 2017). More specifically, the current study found that exposure to community violence (CECV total) and all three of its subcategories (witness, victim and perpetrator) are significant predictors of depressive and withdrawn/depressed symptoms. Further, anxious/depressed symptoms were significantly predicted by exposure to community violence (CECV total), being a witness and victim of community violence, but not a perpetrator of community violence.

Notably, most research explores being a witness or victim of community violence as a predictor of, or associated to, depressive symptoms (Chen et al., 2017; Hong et al., 2014;

Nöthling et al., 2019; Mrug & Windle, 2010; Overstreet, 2000; Voisin & Berringer, 2015). Research has shown that childhood and adolescent depression are co-morbid with psychological disorders, such as anxiety; consequently depressive symptoms and anxiety frequently co-occur in youth, and it is postulated that experiencing either disorder (anxiety or depression) increases the risk of exhibiting the other disorder over time (Garber & Weersing, 2010; Jacobson & Newman, 2017; Liu et al., 2011). A recent SA study carried out in the Western Cape suggested that youth who were victims of violence in their communities scored higher on measures of perceived stress, hopelessness, suicidal ideation, depressive symptoms and anxiety (Sui et al., 2018). These findings are further supported by those from another study carried out in the Western Cape, with a sample of male and female youth aged 12 to 18 years, which found that youth exposed to community violence experienced significantly higher levels of depressive symptoms (Nöthling et al., 2019). Further, previous research indicates that the psychological impact and experience of being a victim of community violence, may be felt beyond a couple of weeks or months following youth's experience of victimization and could possibly extend into adulthood (Menard, 2002; Chen et al., 2017). However, the findings of several studies investigating exposure to violence, including community violence, suggest that internalizing symptoms, such as anxiety and depressive symptoms, may decrease when an individual's exposure to violence is very high; potentially because one becomes desensitized to violence (Gaylord-Harden et al., 2016; Kennedy & Ceballo, 2016). It is worth noting that research further postulates that if desensitization develops into a typical response, it increases adolescents' vulnerability to violence (Donenberg et al., 2020).

A longitudinal study exploring mental health and the use of mental health services during the life course of youth who were exposed to community violence, found that depressive symptoms were significantly more likely to be experienced by youth who were witnesses of community violence (Chen et al., 2017). Mrug and Windle's (2010) findings suggest that witnessing violence at school was a predictor of depression. This is further supported by a school violence study carried out in SA where the findings suggest that youth who were witnesses or victims of school violence exhibited depressive symptoms, which may further negatively affected their concentration and learning ability, as they were afraid of being victims of school violence either during the break/interval time or once school ended for the day (Ncontsa & Shumba, 2013). This suggests that in addition to some youth expressing depressive symptoms as

a result of victimization and witnessing school violence, it can have further detrimental effects on their education, implying that victimization in contexts where youth experience fearfulness and are not able to avoid these contexts (e.g., school) may result in experiencing high rates of distress (Shields et al., 2009a). It is purported that being exposed to violence, including community or school violence, may increase some youth's risk of suicidal ideation and/or attempt/s to commit suicide, due to their experiences of depressive symptoms (Pillai et al., 2009; Saewyc & Chen, 2013).

Regarding perpetration of community violence, previous research has postulated that youth who are depressed and are perpetrators of crime are likely to partake in a more extensive range of criminal acts including violent perpetration and has further proposed that depressive symptoms are associated with an increased rate of recidivism amongst youth offenders (Ritakallio et al., 2005; Tisak et al., 2017; Wiesner & Kim, 2006). Few studies have been conducted and there appears to be a paucity of literature examining whether being a perpetrator of community violence predicts depressive symptoms and further internalizing behaviours. One possible explanation is that perpetration of violence and further community violence cannot be solely attributed to one factor or experience. For instance, perpetration of violence against one's parent(s) and/or sibling(s) can be understood from a perspective of adverse childhood experiences such as witnessing family violence and experiencing maltreatment during childhood (Nowakowski-Sims, 2019). Another potential explanation as is that preparation of violence can be understood within various suggested frameworks such as substance use and abuse (Nowakowski-Sims, 2019). Research indicates that the use of alcohol may lead to disinhibition and exacerbate risk-taking behaviours which may in turn place youth at a higher risk of partaking in criminal activities (Collins 1981 as cited in Fergusson & Horwood, 2000).

A potential explanation for perpetration not being a significant predictor of anxious/depressed symptoms may be that items on the anxious/depressed sub-scale of the CBCL measure feelings and emotions such excessive crying, fear of being in particular situations or places and fear of attending school (Achenbach & Rescorla, 2001; Bares et al., 2011). In contrast, research indicates that young offenders (perpetrators of violence) in comparison to non-offenders are more likely to exhibit behaviours such as higher levels of emotional instability, aggression and less empathy (Llorace-Mestre et al., 2017).

Somatic Complaints and Exposure to Community Violence

The findings of the current study demonstrate that exposure to community violence (CECV total), victimization and witnessing community violence are significant predictors of somatic complaints (in terms of the subscales on the CBCL). Somatic symptoms describe an individual's subjective reports of physical symptoms including muscle pain, headaches, nausea and/or stomach aches (Hart et al., 2013). These symptoms often do not have a specific or identifiable physiological cause (Liu et al., 2011). Literature indicates that somatic complaints may also be reported when one experiences anxiety or depressive disorders, hence suggestive of potential co-morbidity between these disorders and somatic complaints (Bohman et al., 2010; Hughes et al., 2008; Janssens et al., 2010).

The findings of the current study are further supported by Cooley-Quille et al.'s (2001) earlier study comparing youth who experienced lower vs. higher levels of exposure to community violence, with the latter group reporting higher levels of somatic complaints. Further, research looking at exposure to community violence, as a witness or victim, and somatic complaints including headaches and stomach aches, found a positive association (Bailey et al., 2005; Hart et al., 2013). In a cross-sectional study, it was found that African American children who were exposed to community violence were at an increased risk for headaches (57%), appetite problems (28%) and sleeping problems (94%), and that children's self-reports were corroborated with teacher reports (Bailey et al., 2005). Hart et al.'s (2013) findings suggest that boys reported more somatic complaints than girls, however, the boys in the study were exposed to higher levels of community violence (Hart et al., 2013). It has been purported that victims of community violence exhibit higher levels of somatic complaints, than witnesses of community violence and this has been found across both culture and sex (Schwab-Stone et al., 2013).

The current study findings indicate that being a perpetrator was not a significant predictor of somatic complaints in the sample. A potential explanation from research on bullying suggests that perpetration of bullying, such as threatening or physically hitting others and destruction of items, was linked to somatic complaints cross-sectionally, however this relation was no longer significant after the inclusion of covariates such as sex and age (Espejo-Siles et al., 2020).

Externalizing Behaviours and Exposure to Community Violence

The current study's findings expand upon existing research and indicate that the externalizing behaviour syndrome grouping was significantly predicted by exposure to community violence (CECV total) and all three subcategories, namely, being a witness, victim and perpetrator of community violence. Research has demonstrated high rates of co-morbidity of externalizing and internalizing behavioural problems amongst children, adolescents, and adults (Cerda et al., 2008; Liu et al., 2017; White et al., 2013). Furthermore, youth who exhibit co-morbid externalizing and internalizing behaviours face a higher risk of involvement in delinquent behaviour, negative peer relations and affiliating with delinquent peers, in comparison to youth exhibiting only internalizing or externalizing behaviours (Fanti & Henrich, 2010; Oland & Shwa, 2005; Wright et al., 1999).

Fowler et al. (2009) suggests that youth who are both emotionally and cognitively habituated to violence in their community, may begin to display externalizing behaviours as a form of coping with the exposure to community violence. In a study exploring school violence, it was suggested that witnessing school violence was a stronger predictor of later externalizing behaviours than being a victim of school violence (Janosz et al., 2008). Research found that boys and girls who were 12 years old, who witnessed their parent as a victim of community violence exhibited externalizing behaviours, such as delinquency and aggression (Elsaesser et al., 2020). Further, behaviours such as aggression, destruction of property, substance use and theft may be considered as various forms of externalizing behaviours (Vaughn et al., 2014). This may potentially provide an explanation as to why perpetration of community violence predicts externalizing, as there are overlaps in behaviours exhibited.

Aggressive Behaviour and Exposure to Community Violence

The current findings show that while overall aggression and reactive aggression (in terms of subscales on the RPQ and CBCL results) were significantly predicted by exposure to community violence (CECV total) and victimization, proactive aggression was not (a finding not aligned with literature). The significant findings are consistent with and contribute to the existing body of literature on aggression and exposure to community violence. A recent study suggests that there is an association between aggression and victims of community violence, specifically youth who live in low SES urban communities, as these communities are more vulnerable to gang violence, muggings and shootings (Jakubovic & Drabick, 2020). More specifically,

research suggests that being a victim of community violence was positively associated with reactive aggression and manifested as difficulties with emotional regulation, a characteristic feature of reactive aggression (Schwartz & Proctor, 2000). Previous SA studies' findings indicate that being a victim of violence within one's home and community was also a predictor of aggressive behaviour (du Plessis et al., 2015; Kimonis et al., 2011). As previously discussed, higher levels of exposure to violence at various sites, such as the home and community, may increase the chances of modelling aggressive behaviours as an acceptable manner to resolve conflict (du Plessis et al., 2015).

Further, research has demonstrated that youth with greater exposure to community violence or living in communities with high levels of both violence and crime, reported higher levels of reactive and proactive aggression in comparison to youth living in communities which have lower levels of violence (Chaux et al., 2012; Hamner et al., 2015). Research postulates that youth who are exposed to greater levels of community violence may hold beliefs which legitimize aggressive behaviours, experience less feelings of guilt after exhibiting aggressive behaviours, and associate greater negative intentions with individuals (Chaux et al., 2012).

The current study found that witnessing community violence was not a significant predictor of aggression and proactive aggression, which is contradictory to current literature. A possible explanation for these contradictory results may be that youth in the sample may potentially lack the drive for aggressive behaviour, when being a witness or victim of community violence, which is aligned with wanting to protect and defend oneself from harm and/or threats (Sommer et al., 2017). Another potential explanation from previous research suggests that exposure to community violence as a witness or victim may act as a risk factor for aggression and aggressive behaviours in the future, rather than immediately (Cooley-Quille et al, 2001).

Cross-sectional and longitudinal research has demonstrated that there is an association between witnessing community violence and externalizing behavioural problems such as aggression and delinquent behaviour (Barr et al., 2012; Fowler et al., 2009; Guerra et al., 2003; Halliday-Boykins & Graham, 2001; Purugganan et al., 2003; Zinzow et al., 2009). For example, youth who are victims or witnesses of community violence exhibit more aggressive and delinquent behaviours and consequently, may assist in perpetuating a continued cycle of violence due to becoming perpetrators of violence themselves (Gorman-Smith et al., 2004; Luthar & Goldstein, 2004). Victimization and witnessing violence, have similar links to both perpetration

of violence and aggression (Myers et al., 2018). For example, witnessing community violence can be understood within a social learning framework which posits that youth may acquire pro-violence behaviours from individuals in their environment who are perceived as aggressive models (Bradshaw et al., 2009).

The current study's findings also suggest that being a perpetrator of community violence predicted aggression, reactive and proactive aggression and this finding is aligned with existing literature. Research shows that proactive aggression predisposes an individual to criminality and is linked to delinquent behaviour (Raine et al., 2006). This can partially be explained by the nature of proactive aggression, as it is generally characterized by goal-directed and predatory behaviours (Card & Little, 2006). It is proposed that a transformation occurs from being a victim to a perpetrator of violence and this transformation is likely to be seen in youth who may experience externalizing behavioural problems, aggression, and witness and/or experience community violence (Aebi et al., 2015; Fowler et al., 2009; Hinsberger et al., 2016; Shields et al., 2009b). This transformation is viewed as an adaptation for some individuals, such as male youth, who may begin to feel an attraction towards cruelty and violence (Hinsberger et al., 2016). In demonstrating these associations, we can possibly argue that proactive aggression which is motivated and predatory is potentially manifested through engaging in delinquent behaviours and perpetrating violence as one may experience satisfaction when engaging in violent acts (Sommer et al., 2017). This conjecture may also possibly explain why reactive rather than proactive aggression was predicted by the CECV total and victimization. Further, attraction to proactive aggressive behaviours may be reflective of an adaptation process to living in communities which are vulnerable to high levels of violence (Weierstall et al., 2013; Sommer et al., 2017). On the other hand, reactive aggression is often more strongly linked to social maladjustment, such as rejection, low peer acceptance, and victimization (Hamner et al., 2015). It is argued in the literature that reactive aggression may negatively impact personal and social adjustment beyond one's youth and heighten one's vulnerability to internalizing behaviours and externalizing behaviours, such as rule breaking behaviour (Card & Little, 2006).

Rule Breaking Behaviour and Exposure to Community Violence

The current study's findings indicate that exposure to community violence (CECV total), including being a witness and perpetrator of community violence, were significant predictors of rule breaking behaviour. The rule breaking subscale of the CBCL comprises of behaviours such

as using drugs and alcohol, lying, cheating, setting fire/s, stealing from others and one's own home, truancy, and smoking, to name a few (Achenbach & Rescorla, 2001). Youth may engage in both delinquent and rule breaking behaviours as a result of lack of access to and engagement in social organizations, such as school, which promote upstanding behaviours as it is youth's first interaction with formal authority (Pinnock, 2016; Poquiz & Fite, 2018). One can argue that school is a significant area for socialization as it is a space where youth come into contact with peers, adults who are not family members, and are introduced to new notions about the world, and where they may fit in the world (Pinnock, 2016).

Further, being a victim of community violence was not a significant predictor of rule breaking, a finding which contradicts existing literature. Previous research findings indicate that being a victim of community violence was significantly associated with criminal behaviour which overlaps with rule breaking behaviour as defined in the current study (e.g., theft, carrying a weapon, destruction and damage of property and involvement in gang activities) (Eitle & Turner, 2002). Further, a study in the field of child maltreatment with boys and girls aged 7 to 12 years old postulates that experiences of maltreatment, including sexual and physical abuse, neglect and education maltreatment, has a direct relationship with externalizing behaviours such as rule breaking behaviour amongst males (Maschi et al., 2008). Research with participants between 14 to 19 years who were exposed to direct experiences of peer victimization, including experiences of physical assault, showed associations with rule breaking behaviour as measured in the CBCL (Cooley et al., 2015). A more recent study carried out with Spanish youth, specifically male and female youth between the ages of 13 to 18 years, suggests that being exposed to violence within the home, as a victim of psychological violence and abuse, was associated with an increase in rule breaking behaviours and illegal substance use over time (Izaguirre & Calvete, 2018). A possible explanation as to why the current study's results are discrepant with those reported in the aforementioned study is that Izaguirre and Calvete (2018) specifically focused on family violence, namely, intimate partner violence against youth's mothers as a predictor and explored victimization experienced in the home by one's parents, while the current study looked at victimization by one's family members including one's parents and individuals who are not family members.

It is worth noting that most studies mention rule breaking, but do not specifically state or describe the actions which constitutes what rule breaking behaviours are. Research findings

indicate that being a youth witness and victim of community violence was associated with experiencing externalizing problems including delinquent behaviours (e.g., rule breaking at school, home or other contexts) and aggression (Hardaway et al., 2016). A study with children and adolescents aged 4 to 15 years found that being a witness of home and community violence was significantly and positively associated with externalizing behaviours including rule breaking (Fleckman et al., 2016). Both studies discussed here include rule breaking behaviours as an example of other behaviour syndromes and rule breaking itself is not further expanded upon.

A potential rationale is that rule breaking behaviours includes various behaviours such as substance and alcohol abuse, which can be explored independently and can also overlap with conduct problems, which may be characterized by behaviours which are disruptive, rule breaking, violate social norms and other individuals' rights (Achenbach & Rescorla, 2001; APA, 2013; Fite et al., 2018; Fleckman et al., 2016; Poquiz & Fite, 2018). For example, the results of a study examining exposure to community violence, and oppositional and conduct problems, suggest that exposure to community violence is associated with conduct problems, namely, rule breaking behaviours, which comprise of physical aggression, illegal substance use and truancy (Poquiz & Fite, 2018). Research with high school youth suggests that perpetrators of violence were at a heighten risk for externalizing behaviours including substance use, theft and truancy in comparison to youth who were not victims, perpetrators or perpetrator-victims (Yen et al., 2010). It is worth noting that rule breaking behaviours are framed within the context of externalizing behaviours in the above study. As there are various forms of rule breaking behaviour, which may not always be specifically stated and/or defined as such in research, the current study aims to provide a clearer distinction and highlights a need for further studies specifically exploring the associations between being a perpetrator of community violence and rule breaking behaviours that male youth may engage in.

Callous-Unemotional Traits and Exposure to Community Violence

It is worth noting that none of the variables in the current study were significantly correlated with the ICU. This finding is contradictory to existing literature (e.g., Davis et al., 2015; Kimonis et al., 2008a; Waller, Baskin-Sommers, Hyde, 2018) which indicates that there is an association between exposure to community violence as a victim and/or witness and heightened vulnerability to experiencing callous-unemotional traits. One plausible explanation is that callous-unemotional traits are related to other factors besides exposure to community

violence. Research postulates that youth who display symptoms of callous-unemotional traits experience problems with offending behaviour (e.g., carrying a weapon and assaultive behaviour) and aggression which may also lead to psychopathic and antisocial behaviours in adulthood (Barry et al., 2000; Davis et al., 2015; Frick & Dicken, 2006; Frick & White, 2008; Patchin et al., 2006). Further, Byrd et al.'s (2013) research assessing the facture structure of the ICU with adult male participants of an average age of 25 years old confirms that ICU total scores correlates significantly with measures assessing self-reported delinquent behaviour (Self-Report of Delinquency; Elliot et al., 1985), psychopathy (Self-Report of Psychopathy-III; Paulhus et al., 2012) and substance use (Substance Use Questionnaire; Loeber et al., 1998).

Moreover, another possible explanation is that development of callous-unemotional traits in youth may be impacted by environmental and social influences which may act as potential risk factors. These potential risk factors include and are not limited to substance use, anxiety, exposure to violence and parenting style (Waller, Baskin-Sommers, & Hyde, 2018). Recent research in the field of callous-unemotional traits suggest that one particular environmental influence, namely negative and harsh parenting, may also play a role in the development of callous-unemotional traits (Vidign & Kimonis, 2019). This is further echoed by research which suggests that children who display callous-unemotional traits often have a history of being subjected to harsh parenting styles and experience a lack of parental warmth (Waller, Hyde, Klump, & Burt, 2018). Notably, harsh parenting may include low involvement, inconsistency, lack of supervision and communication, which may play a causal role in callous-unemotional traits seen in some children (Davis et al., 2015). Further, findings from a recent study indicate that child maltreatment may possibly act as a risk factor for callous-unemotional traits as the study found that in comparison to those who did not experience maltreatment, children who were subject to maltreatment were significantly more likely to exhibit greater levels of callous-unemotional traits (Joyner & Beaver, 2021). Moreover, harsh parenting, lack of parental warm and child maltreatment are factors that may possibly be prevalent in the current study sample as participants may have been exposed to such incidents within their backgrounds.

Another potential explanation may be that within the current study sample, high rates of callous-unemotional traits were not reported and/or underreported by participants. For instance, in the current study, participants reported score for callous-unemotional traits on the ICU was on average, 21.56. This result is lower in comparison to previous research looking at callous-

unemotional traits such as Kimonis et al.'s (2008b) study where participants' reported score for the ICU was, on average, 26.07, and López-Romero et al.'s (2015) study where the reported score was, on average, 31.37. Notably, Kimonis et al.'s (2008b) and López-Romero et al.'s (2015) study participants were male young offenders in juvenile detention centres while participants in the current study are non-offenders.

Exposure to Community Violence and its Influence on Male Youth Development

The above discussion has shown that exposure to community violence, specifically with regards to SA male youth, has a pervasive impact on male youth's behaviours and emotions. However, it worth noting that although many youths are exposed to violence including community violence, the reactions to the prevalence and severity of violence are likely not distributed equally amongst all youth (Aisenberg & Herrenkohl, 2008; Baskin & Sommers, 2015).

Adolescence is a time of turmoil, stress and for some youth, it can be a period of increased engagement in risk taking behaviours including perpetrating violence, which may be harmful to others or oneself (Boyer, 2006; Feldstein & Miller, 2006; Gardner & Steinberg, 2005). The findings of a recent SA study looking at risk-taking behaviour amongst SA youth demonstrated that youth who are exposed to violence, such as gang violence in their community, and engage with peers who have a negative influence, are more vulnerable to partaking in risk-taking behaviours such as consuming alcohol and engaging in delinquent behaviours (de Jager & Naudé, 2018). The study further demonstrated that male youth exhibited more violent behaviours than females, however the study did not specify what these violent behaviours were (de Jager & Naudé, 2018). The current study findings have shown that SA male youth engage in a variety of risk-taking behaviours such as consuming alcohol and/or illegal substances. Research has suggested that the experimentation with and consumption of drugs and alcohol may further fuel violence and violent behaviour by youth (Otwombe et al., 2015).

Considering the bioecological model, the current study findings show how the wider ecological environment influences and impacts youth behaviours and emotions. For example, research suggesting the idea that violence occurring in the higher levels of the model (e.g. exosystem or macrosystem) contributes to violence in lower levels of the model (e.g. microsystem) has been longstanding (Boxer et al., 2013). This can be seen in the current study findings as youth who are exposed to community violence, including home and school violence

as either a witness, victim and/or perpetrator, experience adverse emotional and behavioural outcomes at an individual level. This is supported by research on the model demonstrating that youth are impacted by their immediate settings and close relationship to others (Huang et al., 2015). Further, research postulates that community- and individual-level factors combined leads to the modelling of violent behaviour and furthers one's vulnerability to associated violence exposure (Heinze et al., 2021).

Furthermore, one of the main developmental tasks when children transition to adolescence is the construction of a strong identity (Petersen et al., 2017). Identity development is shaped by contextual factors such as lifestyle, values, roles and beliefs, and is further influenced by socialization which can be viewed as detrimental to identity construction in the context of violence, such as home and community violence (Bray et al., 2010; Erikson, 1968, Kroger, 2015; Petersen et al., 2017). Research postulates that exposure to violence in the home between family members is significantly associated with decreased levels of autonomy, trust, taking initiative, and identity foreclosure amongst youth (Burdett Schiavone, 2009; Levendosky et al., 2002; Petersen et al., 2017). Consequently, youth may perceive their environment as failing to provide safety, security and social support, all of which are crucial for the healthy development and identity development (Burdett Schiavone, 2009). This narrative is further supported by research which has shown that exposure to violence and community violence may impact developmental processes which may in turn affect psychosocial maturity, and result in self-regulation and socialization skills that are poor and is likely to exacerbate impulsive behaviour (Aisenberg & Herrenkohl, 2008; Baskin & Sommers, 2015; Boney-McCoy & Finkelhor, 1995). In the context of the current study's findings, it is reasonable to argue that identity development of SA male youth is likely to be negatively shaped when youth are exposed to various forms of community violence, in various contexts such as one's home, school and community, and can be exacerbated when exposure to community violence is coupled with experiencing internalizing and externalizing behaviours.

The current study's findings indicated that exposure to community violence is a significant predictor of internalizing and externalizing behaviours, which may impact adjustment and hinder normative development of youth (Mrug et al., 2008). For example, as encounters with violence as either a witness, victim or perpetrator are intrinsically stressful, these encounters are likely to lead to greater levels of hypervigilance, emotional arousal, concentration difficulties and

is likely to disrupt the development of one's self-regulation including the capability to control one's own behaviours, attention, and emotions (Margoli & Gordis, 2004; Masten & Coatsworth, 1998; Mrug et al., 2008; Saltzman et al., 2005). Difficulties experienced with self-regulation especially when concentration and emotional arousal difficulties are present, are likely to translate into externalizing problems including aggression and internalizing problems including depressive and anxiety symptoms (Mrug et al., 2008). Therefore, one can argue that concerning youth exposed to community violence, there is a need to intervene due to the potential risks associated with increased exposure to community violence as demonstrated in this study.

Research suggests that for interventions such as community-based interventions to have an impact, it is important to consider the intersections and interactions of a variety of influences such the political and social context and responses of recipients of the intervention (Van Niekerk et al., 2014). Specifically, in SA, key consideration should be given to influences which may have an impact on, inhibit, or promote, the successful implementation of an intervention, as SA is characterised by community structures which are fragmented and communities which lack cohesion (Ismail & Van Niekerk, 2020; Van Niekerk et al., 2014). Further, interventions considering these factors could then focus on possible victims of violence by limiting characteristics and factors which increase their predisposition to experiences of victimization and further focus on possible perpetrators of violence by aiming to limit tendencies of violent behaviour (Dahlberg & Krug, 2002; Matzopoulos et al., 2008).

Limitations

There are a few limitations in this research which may reduce the generalizability of the findings to the wider SA population. The current study only explored exposure to community violence, callous-unemotional traits, internalizing and externalizing behaviours in relation to male youth and did not look the experiences of SA female youth. Ma et al. (2016) suggests that female youth are more likely than male youth to exhibit behaviours associated to withdrawn/depressed behaviour. However, research in SA suggests that while both male and female youth can be exposed to high levels of community violence, male youth experience significantly higher rates of exposure to community violence (Donenberg et al., 2020; Kaminer, du Plessis, Hardy, et al., 2013; Sui et al., 2021).

Further, the use of self-report measures to establish exposure to community violence and internalizing and externalizing behaviours may be perceived as problematic, as issues including

incorrect information and social desirability bias, particularly regarding reporting about consuming illegal substances and engaging in delinquent behaviour, may arise. It is worth noting that participants may have underreported illegal substance use as participants may only be familiar with the street name of the illegal substance; this may be overcome in the future by using both the formal and street name of the substance when interviewing participants. However, concerning self-reports of community violence exposure, research has indicated that the use of self-reports may provide a more accurate account of exposure to violence in comparison to parent or teacher reports due to the fact that as youth mature, they are able to provide better accounts of their individual experiences in various contexts including the school and community (Thompson et al., 2007). Research has previously pointed to the fact that self-reports are the best type of measure for assessing constructs such as early youth substance use (Luthar & Goldstein, 2004).

As the research is cross-sectional and correlational, it may have limited the interpretations and understandings of the study's results. Consequently, longitudinal research may be needed to provide a more holistic understanding. However, due to limited time, a cross-sectional design allowed for data to be collected quickly, in an inexpensive manner and previous research has also been of a cross-sectional design enabling the assessing and understanding of prevalence of exposures or outcomes (Setia, 2016).

Future Research

Given the study's results, research in the field of community violence and internalizing and externalizing behaviours should use a longitudinal design to explore and follow youth from childhood to adulthood. This will allow for more insight and understanding of how exposure to community violence affects behavioural and emotional development of male youth. Future studies should consider a mixed methods design, using both quantitative and qualitative measures, such as having semi-structured interviews with participants who have higher scores on measures, to gain better insight into participants' experiences of community violence and how it impacts their emotions and behaviours. Arguably, it is important that future studies use qualitative approaches to complement quantitative analyses to allow for the elaboration and clarification of identified associations and relationships and to understand why and how various factors and influences may interact in complex ways to produces incidents of violence (Bowman et al., 2015). This would lead to having a more holistic understanding of the associations that

exist between these forms of exposure to community violence (witness, victim, and perpetrator) and internalizing and externalizing behaviours. Additionally, this may provide a basis to inform future research and community-based interventions aimed at SA male youth. It is imperative that future research and interventions acknowledge the role that broader structural problems play in the manifestation of community violence.

Conclusion

The current study explored the association between exposure to community violence, internalizing and externalizing behaviours in SA male youth. The current study's hypothesis is supported in part, as youth exposed to higher levels of community violence, as a witness, victim, or perpetrator, exhibited greater levels of internalizing and externalizing behaviours. Not all forms of community violence were significant predictors of all relevant outcome variables though. A large body of literature has indicated that exposure to community violence increases the risk for and exacerbates internalizing and externalizing behaviours during adolescence. However, a dearth in SA literature exists when addressing the associations between internalizing and externalizing behaviours and exposure to community violence on all three levels, namely, witness, victim, or perpetrator. Consequently, studies, such as the current one, are imperative in order to promote similar research in the field in SA, as rates of violence including community violence remain high and youth are often exposed to various forms of community violence which may further indicate that youth do not have places/spaces to go to avoid such exposure (Brankovic, 2019; De Wet et al., 2018; Shields et al., 2008; Sui et al., 2018; Ward et al., 2001).

The research findings suggest that exposure to community violence significantly predicts internalizing and externalizing behaviours. Hence, it is key to consider implementing community and/or school interventions aimed at SA male youth who are exposed to violence in their home, school and/or community, in order to equip male youth with coping skills, attempt to reduce occurrences of victimization and perpetration of community violence, and potentially reduce high levels of both internalizing and externalizing behaviours exhibited.

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Appendix A

Previous Community Violence Studies Conducted in South Africa

Author(s) and year	Aim	Sample characteristics	Findings	Potential gap
Barbarin et al., 2001	Analysing how exposure to political, vicarious, family and community violence effects the adjustment of South African children.	• N= 625 • 0 – 10 years	Exposure to vicarious and ambient violence lead to effects parallel to those observed when a child is victimized.	As the focus is on school children, they may not be aware of their feelings of distress or be able to reflect on these feelings. The study does not look at violence in the three forms as the current study does.
Ward et al., 2001	Establish prevalence rates in a South African of youth's exposure to violence and the related symptoms and to explore the associations between symptoms and exposure.	• N= 104 • Average age of 17 years • Males and females • High SES	Exposure to one form of violence increases the risk of exposure to other forms of violence.	Study focuses more on how exposure to one form of violence increases one's vulnerability to exposure to other forms of violence, rather than behavioural and emotional outcomes associated with exposure to violence.
Shields et al., 2008	Explore the relationship between psychological distress and exposure to violence, such as, community, police, school and gang violence in Cape Town.	• N =185 • Ages 8 – 13 • Low SES • Males and females	Children's perceived safety acted as a mediating variable in relation to all types of violence, suggesting that distress as a result of violence exposure can be reduced by a child's ability to have a sense or feeling of safety.	The study does not explore in-depth the internalizing or externalizing behaviours associated with youth being exposed to community violence.

Author(s) and year	Aim	Sample characteristics	Findings	Potential gap
Shields et al., 2009a	Exploring the overlap of victimization, witnessing violence and perpetration of violence in a child's community and school.	• *N*=247 • 8 -13 years. • Children from low SES communities and homes.	Being victimized at school was more strongly related to psychological distress then being a witness to violence. In contrast, the opposite effect was present within the community.	Focus on the experience of violence and its moderating variables, namely, social support and family organization, and does not explore the externalizing or internalizing behaviours.
Shields et al., 2009b	Determine whether PTSD mediates the relationship between violence exposure and depression and violence exposure and violent and aggressive behaviour	• *N* = 247 • 8-13 years • Males and females • Low SES	The effects of violence exposure on depression was mediated by PTSD.	The study did not explore somatic complaints and anxiety when looking at internalizing behaviours and did not look at rule breaking behaviours in relation to externalizing behaviours.
Ngidi, 2010	In a sample of treatment-seeking youth, explore the associations between exposure to community violence, childhood trauma, stressful events, sociodemographics and the manifestation of psychopathology	• *N* = 132 • Male and female • 12 – 18 years • Low SES	Results suggested that substance and alcohol consumption, gender and having a history of experiences childhood trauma was associated to developing psychopathology. The development of psychopathology is further impacted by exposure to community violence, socio-economic factors and experiences adverse life events.	The study did not look at externalizing behaviours

Author(s) and year	Aim	Sample characteristics	Findings	Potential gap
Isaacs, 2010	Aimed to learn about youths' perceptions of exposure to community violence and the degree to having a sense of hope is impacted by their perceptions	• *N*= 14 • 14 -15 years • Males and Females	Youth viewed community violence as impacting everyone within their community and understanding that hope can be a motivational tool and hope was further associated to faith	As the study was qualitative in nature, no quantitative measures such as the CBCL or ASSIST were completed by participants. Further, externalizing behaviours were not explored and only explored being a witness or victim of community violence.
Mkhize et al., 2012	Explore the effect and nature of violence on adolescents in KwaZulu-Natal.	• *N* =20 • Male and female grade 11 and 12 high school pupils • 16 – 19 years	Adolescents are vulnerable to high levels of violence exposure and violence exposure was further associated with adverse psychological effects. Further, results showed that about 80% of violence exposure incidents were not reported to the relevant authority.	The study conducted qualitative interviews and it not make use of measures such as the BDI-II or CBCL. Further, the study did not explore perpetrating of community violence.
Kaminer et al., 2013a	Establish prevalence rates of lifetime exposure and polyvictimiztion to various forms of violence within the community, home and school in South African youth.	• *N*= 617 • Low SES • 12 – 15 years • Males and females	Violence exposure across multiple contexts is a daily experience, with high rates of exposure to violence in the community.	Study does not focus on youth being perpetrators of violence and emotional or behavioural outcomes were not discussed.
Otwombe et al., 2015	Exploring exposure, experiences, and risk factors for violence in a sample of racially diverse youth in Johannesburg.	• *N*= 822 • 16-18 years old • Low SES	Adolescent males are more likely to experience and witness community violence with youth witnessing community violence rather than being victimized.	Study does not explore emotional outcomes, such as, aggression and depression.

Author(s) and year	Aim	Sample characteristics	Findings	Potential gap
du Plessis et al., 2015	Explore how different forms of violence contribute externalizing and internalizing mental health outcomes in a sample of South African adolescents.	• *N*= 616 • Males and females • 12 -15 years	Victimization within the home is associated with a greater risk of externalizing and internalizing behavioural outcomes.	Study does not focus on youth perpetration of violence.
Stansfeld et al., 2017	Explore the association between emotional disorders and exposure to violence in adolescents in Cape Town.	• *N* = 1034 • Males and females • Grade 8 high school pupils	Emotional support did not act as a buffer when adolescents experienced high levels of violence exposure which was further associated with greater levels of emotional disorders.	The study did not explore youth as witnesses, victims, or perpetrators and did not examine associated externalizing behaviours.
Sui et al., 2018	Exploring the associations between psychological functioning and different forms of exposure to violence in South African youth.	• *N*= 1 574 • 13 – 20 years • 81.6% of participants were low SES	Adolescents who are victimized within the community were more likely to experience depression, anxiety, suicidal ideation.	While the study does explore emotional outcomes, it does not particularly focus on externalizing or behavioural outcomes, such as, antisocial behaviour or aggression.
Nöthling et al., 2019	Assess the weighted contributions of trauma load, community violence, demographics, neglect and forms of abuse in predicting the severity of PTSD symptoms, and to determine potential group differences of these factors with participants with depression or PTSD only, no disorder or PTSD and depression.	• *N* = 215 • Males and females • 12 -18 years	In comparison to adolescents who were trauma-exposed and had no disorder and adolescents who were trauma-exposed and exhibited depression and PTSD reported significantly greater rates of exposure to community violence and emotional abuse.	The study did not explore potentially related externalizing and internalizing behaviours, except for depression.

Author(s) and year	Aim	Sample characteristics	Findings	Potential gap
Donenberg et al., 2020	Assessing the pathway between externalizing and internalizing problems and exposure to community violence in SA adolescents who receive mental healthcare, and the roles of ones peer and parent relations in these pathway associations.	• *N*= 120 adolescent-parent pairs • Males and females • 12-18 years	According to adolescent or parent reports, adolescents receiving mental healthcare had internalizing and externalizing symptoms which were clinically significant. Further, high levels for witnessing of community violence were reported by adolescents and males reported significantly higher rates of exposure in comparison to females, however the difference in exposure is small.	The study did not explore victimization and perpetration of community violence and mainly focused on witnessing community violence.
Sui et al., 2020	Examine the relationship between sociodemographics and typologies of violence such as victims or perpetrators only, victim-perpetrators and no involvement as either a perpetrator or victim	• *N* = 30 007 • 11-19 years • Males and females	Different typologies of violence were uniquely associated to different sociodemographics.	The study did not explore youth as witnesses of violence

Appendix B

Alcohol Use Disorders Identification Test (AUDIT)

AUDIT questionnaire

Please circle the answer that is correct for you

1. How often do you have a drink containing alcohol?

· Never
· Monthly or less
· 2-4 times a month
· 2-3 times a week
· 4 or more times a week

2. How many standard drinks containing alcohol do you have on a typical day when drinking?

· 1 or 2
· 3 or 4
· 5 or 6
· 7 to 9
· 10 or more

3. How often do you have six or more drinks on one occasion?

· Never
· Less than monthly
· Monthly
· Weekly
· Daily or almost daily

4. During the past year, how often have you found that you were not able to stop drinking once you had started?

· Never
· Less than monthly
· Monthly
· Weekly
· Daily or almost daily

5. During the past year, how often have you failed to do what was normally expected of you because of drinking?

· Never
· Less than monthly
· Monthly
· Weekly
· Daily or almost daily

6. During the past year, how often have you needed a drink in the morning to get yourself going after a heavy drinking session?

· Never
· Less than monthly
· Monthly
· Weekly
· Daily or almost daily

7. During the past year, how often have you had a feeling of guilt or remorse after drinking?

· Never
· Less than monthly
· Monthly
· Weekly
· Daily or almost daily

8. During the past year, have you been unable to remember what happened the night before because you had been drinking?

· Never
· Less than monthly
· Monthly
· Weekly
· Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

· No
· Yes, but not in the past year
· Yes, during the past year

10. Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested you cut down?

· No
· Yes, but not in the past year
· Yes, during the past year

Scoring the AUDIT

Scores for each question range from 0 to 4, with the first response for each question (eg never) scoring 0, the second (eg less than monthly) scoring 1, the third (eg monthly) scoring 2, the fourth (eg weekly) scoring 3, and the last response (eg. daily or almost daily) scoring 4. For questions 9 and 10, which only have three responses, the scoring is 0, 2 and 4 (from left to right).

A score of 8 or more is associated with harmful or hazardous drinking, a score of 13 or more in women, and 15 or more in men, is likely to indicate alcohol dependence.

Saunders JB, Aasland OG, Babor TF et al. Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption — II. Addiction 1993, 88: 791–803.

Appendix C

Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST)

A. WHO - ASSIST V3.0

INTERVIEWER ID | COUNTRY | CLINIC

PATIENT ID | DATE

INTRODUCTION ***(Please read to patient)***

Thank you for agreeing to take part in this brief interview about alcohol, tobacco products and other drugs. I am going to ask you some questions about your experience of using these substances across your lifetime and in the past three months. These substances can be smoked, swallowed, snorted, inhaled, injected or taken in the form of pills (show drug card).

Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know. While we are also interested in knowing about your use of various illicit drugs, please be assured that information on such use will be treated as strictly confidential.

NOTE: BEFORE ASKING QUESTIONS, GIVE ASSIST RESPONSE CARD TO PATIENT

Question 1
(if completing follow-up please cross check the patient's answers with the answers given for Q1 at baseline. Any differences on this question should be queried)

In your life, which of the following substances have you ever used? *(NON-MEDICAL USE ONLY)*	**No**	**Yes**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3
d. Cocaine (coke, crack, etc.)	0	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3
j. Other - specify:	0	3

Probe if all answers are negative:
"Not even when you were in school?"

If "No" to all items, stop interview.

If "Yes" to any of these items, ask Question 2 for each substance ever used.

Question 2

In the past three months, how often have you used the substances you mentioned *(FIRST DRUG, SECOND DRUG, ETC)*?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
d. Cocaine (coke, crack, etc.)	0	2	3	4	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	2	3	4	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	2	3	4	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	2	3	4	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	2	3	4	6
j. Other - specify:	0	2	3	4	6

If "Never" to all items in Question 2, skip to Question 6.

If any substances in Question 2 were used in the previous three months, continue with Questions 3, 4 & 5 for each substance used.

Question 3

During the past three months, how often have you had a strong desire or urge to use *(FIRST DRUG, SECOND DRUG, ETC)*?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	3	4	5	6
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	3	4	5	6
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	3	4	5	6
d. Cocaine (coke, crack, etc.)	0	3	4	5	6
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	3	4	5	6
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	3	4	5	6
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	3	4	5	6
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	3	4	5	6
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	3	4	5	6
j. Other - specify:	0	3	4	5	6

Question 4

During the past three months, how often has your use of *(FIRST DRUG, SECOND DRUG, ETC)* led to health, social, legal or financial problems?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	4	5	6	7
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	4	5	6	7
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	4	5	6	7
d. Cocaine (coke, crack, etc.)	0	4	5	6	7
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	4	5	6	7
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	4	5	6	7
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	4	5	6	7
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	4	5	6	7
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	4	5	6	7
j. Other - specify:	0	4	5	6	7

Question 5

During the past three months, how often have you failed to do what was normally expected of you because of your use of *(FIRST DRUG, SECOND DRUG, ETC)*?	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
a. Tobacco products					
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	5	6	7	8
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	5	6	7	8
d. Cocaine (coke, crack, etc.)	0	5	6	7	8
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	5	6	7	8
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	5	6	7	8
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	5	6	7	8
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	5	6	7	8
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	5	6	7	8
j. Other - specify:	0	5	6	7	8

Ask Questions 6 & 7 for all substances ever used (i.e. those endorsed in Question 1)

Question 6

Has a friend or relative or anyone else <u>ever</u> expressed concern about your use of *(FIRST DRUG, SECOND DRUG, ETC.)*?	**No, Never**	**Yes, in the past 3 months**	**Yes, but not in the past 3 months**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 7

Have you <u>ever</u> tried and failed to control, cut down or stop using *(FIRST DRUG, SECOND DRUG, ETC.)*?	**No, Never**	**Yes, in the past 3 months**	**Yes, but not in the past 3 months**
a. Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
b. Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
c. Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
d. Cocaine (coke, crack, etc.)	0	6	3
e. Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)	0	6	3
f. Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
g. Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	0	6	3
h. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	0	6	3
i. Opioids (heroin, morphine, methadone, codeine, etc.)	0	6	3
j. Other – specify:	0	6	3

Question 8

	No, Never	Yes, in the past 3 months	Yes, but not in the past 3 months
Have you <u>ever</u> used any drug by injection? ***(NON-MEDICAL USE ONLY)***	0	2	1

IMPORTANT NOTE:

Patients who have injected drugs in the last 3 months should be asked about their pattern of injecting during this period, to determine their risk levels and the best course of intervention.

PATTERN OF INJECTING	INTERVENTION GUIDELINES
Once weekly or less or Fewer than 3 days in a row	**Brief Intervention including "risks associated with injecting" card**
More than once per week or 3 or more days in a row	**Further assessment and more intensive treatment***

HOW TO CALCULATE A SPECIFIC SUBSTANCE INVOLVEMENT SCORE.

For each substance (labelled a. to j.) add up the scores received for questions 2 through 7 inclusive. Do not include the results from either Q1 or Q8 in this score. For example, a score for cannabis would be calculated as: **Q2c + Q3c + Q4c + Q5c + Q6c + Q7c**

Note that Q5 for tobacco is not coded, and is calculated as: **Q2a + Q3a + Q4a + Q6a + Q7a**

THE TYPE OF INTERVENTION IS DETERMINED BY THE PATIENT'S SPECIFIC SUBSTANCE INVOLVEMENT SCORE

	Record specific substance score	no intervention	receive brief intervention	more intensive treatment *
a. tobacco		0 - 3	4 - 26	27+
b. alcohol		0 - 10	11 - 26	27+
c. cannabis		0 - 3	4 - 26	27+
d. cocaine		0 - 3	4 - 26	27+
e. amphetamine		0 - 3	4 - 26	27+
f. inhalants		0 - 3	4 - 26	27+
g. sedatives		0 - 3	4 - 26	27+
h. hallucinogens		0 - 3	4 - 26	27+
i. opioids		0 - 3	4 - 26	27+
j. other drugs		0 - 3	4 - 26	27+

NOTE: *FURTHER ASSESSMENT AND MORE INTENSIVE TREATMENT may be provided by the health professional(s) within your primary care setting, or, by a specialist drug and alcohol treatment service when available.

Appendix D

Inventory of Callous-Unemotional Traits (ICU)

1

ICU
(Youth Version)

Name: _____

Date Completed: _____

Instructions: Please read each statement and decide how well it describes you. Mark your answer by circling the appropriate number (0-3) for each statement. Do not leave any statement unrated.

	Not at all true	Somewhat true	Very true	Definitely True
1. I express my feelings openly.	0	1	2	3
2. What I think is "right" and "wrong" is different from what other people think.	0	1	2	3
3. I care about how well I do at school or work.	0	1	2	3
4. I do not care who I hurt to get what I want.	0	1	2	3
5. I feel bad or guilty when I do something wrong.	0	1	2	3
6. I do not show my emotions to others.	0	1	2	3
7. I do not care about being on time.	0	1	2	3
8. I am concerned about the feelings of others.	0	1	2	3
9. I do not care if I get into trouble.	0	1	2	3
10. I do not let my feelings control me.	0	1	2	3
11. I do not care about doing things well.	0	1	2	3
12. I seem very cold and uncaring to others.	0	1	2	3
13. I easily admit to being wrong.	0	1	2	3
14. It is easy for others to tell how I am feeling.	0	1	2	3
15. I always try my best.	0	1	2	3
16. I apologize ("say I am sorry") to persons I hurt.	0	1	2	3
17. I try not to hurt others' feelings.	0	1	2	3
18. I do not feel remorseful when I do something wrong.	0	1	2	3
19. I am very expressive and emotional.	0	1	2	3
20. I do not like to put the time into doing things well.	0	1	2	3

2

21. The feelings of others are unimportant to me.	0	1	2	3
22. I hide my feelings from others.	0	1	2	3
23. I work hard on everything I do.	0	1	2	3
24. I do things to make others feel good.	0	1	2	3

Appendix E

Beck's Depression Inventory- Second Edition (BDI-II)

Beck's Depression Inventory

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.

1.
- 0 I do not feel sad.
- 1 I feel sad
- 2 I am sad all the time and I can't snap out of it.
- 3 I am so sad and unhappy that I can't stand it.

2.
- 0 I am not particularly discouraged about the future.
- 1 I feel discouraged about the future.
- 2 I feel I have nothing to look forward to.
- 3 I feel the future is hopeless and that things cannot improve.

3.
- 0 I do not feel like a failure.
- 1 I feel I have failed more than the average person.
- 2 As I look back on my life, all I can see is a lot of failures.
- 3 I feel I am a complete failure as a person.

4.
- 0 I get as much satisfaction out of things as I used to.
- 1 I don't enjoy things the way I used to.
- 2 I don't get real satisfaction out of anything anymore.
- 3 I am dissatisfied or bored with everything.

5.
- 0 I don't feel particularly guilty
- 1 I feel guilty a good part of the time.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6.
- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7.
- 0 I don't feel disappointed in myself.
- 1 I am disappointed in myself.
- 2 I am disgusted with myself.
- 3 I hate myself.

8.
- 0 I don't feel I am any worse than anybody else.
- 1 I am critical of myself for my weaknesses or mistakes.
- 2 I blame myself all the time for my faults.
- 3 I blame myself for everything bad that happens.

9.
- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10.
- 0 I don't cry any more than usual.
- 1 I cry more now than I used to.
- 2 I cry all the time now.
- 3 I used to be able to cry, but now I can't cry even though I want to.

11.
0 I am no more irritated by things than I ever was.
1 I am slightly more irritated now than usual.
2 I am quite annoyed or irritated a good deal of the time.
3 I feel irritated all the time.

12.
0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

13.
0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions more than I used to.
3 I can't make decisions at all anymore.

14.
0 I don't feel that I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel there are permanent changes in my appearance that make me look unattractive
3 I believe that I look ugly.

15.
0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

16.
0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.
0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

18.
0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

19.
0 I haven't lost much weight, if any, lately.
1 I have lost more than five pounds.
2 I have lost more than ten pounds.
3 I have lost more than fifteen pounds.

20.

0 I am no more worried about my health than usual.
1 I am worried about physical problems like aches, pains, upset stomach, or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems that I cannot think of anything else.

21.

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I have almost no interest in sex.
3 I have lost interest in sex completely.

INTERPRETING THE BECK DEPRESSION INVENTORY

Now that you have completed the questionnaire, add up the score for each of the twenty-one questions by counting the number to the right of each question you marked. The highest possible total for the whole test would be sixty-three. This would mean you circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean you circles zero on each question. You can evaluate your depression according to the Table below.

Total Score	Levels of Depression
1-10	These ups and downs are considered normal
11-16	Mild mood disturbance
17-20	Borderline clinical depression
21-30	Moderate depression
31-40	Severe depression
over 40	Extreme depression

Appendix F

University of Cape Town Ethical Approval Letter (current study)

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3417
Fax No. (021) 650 4104

11 June 2019

Zayaan Goolam Nabi
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Zayaan

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your study, *Investigating exposure to community violence and associated internalizing and externalizing behaviours in a sample of South Africa male Youth*. The reference number is PSY2019-035

I wish you all the best for your study.

Yours sincerely

University of Cape Town
ΨPSYCHOLOGY DEPARTMENT
Upper Campus
Rondebosch

Lauren Wild (PhD)
Associate Professor
Chair: Ethics Review Committee

Appendix G

Western Cape Department of Education Ethical Approval Letter (larger study)

Western Cape Government
Education

Directorate: Research

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REFERENCE: 20180308-249
ENQUIRIES: Dr A T Wyngaard

Ms Nina Steenkamp
18 Vissershof Road
Bothasig
7441

Dear Ms Nina Steenkamp

RESEARCH PROPOSAL: THE PREVALENCE OF TRAUMATIC BRAIN INJURY AND AN INVESTIGATION OF BEHAVIOURAL, EMOTIONAL AND EXECUTIVE FUNCTIONING IN A SAMPLE OF MALE YOUNG OFFENDERS

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **04 February 2019 till 27 September 2019**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 30 January 2019

Appendix H

Western Cape Department of Education Ethical Approval Letter (current study)

Western Cape Government
Education

Directorate: Research

Audrey.wyngaard@westerncape.gov.za
tel: +27 021 467 9272
Fax: 0865902282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 20190729-7337
ENQUIRIES: Dr A T Wyngaard

Ms Zayaan Goolam Nabi
13 Ashford Road
Heathfield
7945

Dear Ms Zayaan Goolam Nabi

RESEARCH PROPOSAL: INVESTIGATING EXPOSURE TO COMMUNITY VIOLENCE AND ASSOCIATED INTERNALIZING AND EXTERNALIZING BEHAVIOURS IN A SAMPLE OF SOUTH AFRICAN YOUTH

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **26 July 2019 till 20 September 2019**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 31 July 2019

Appendix I

Parent Consent Form

UCT Department of Psychology

Parent Consent Form

Informed consent for you and your child to participate in research

You and your son are being invited to take part in a research study. This form provides you with information about the study and asks for your permission for your son to take part in the research study. We are also asking if you would agree to complete a brief questionnaire. Your and your son's participation is entirely voluntary. Before you decide about taking part, read the information below and if you have any questions, please feel free to contact the Principal researcher. You and/or your son will not be disadvantaged in any way by participating or not participating in this study.

1. **Title of Research Study**

   The prevalence of head injury and associated problems in boys.

2. **Principal Investigators and Telephone Numbers**

   Nina Steenkamp
   Zayaan Goolam Nabi
   Masters in Psychology (students)
   Department of Psychology
   University of Cape Town

   Dr Leigh Schrieff
   Supervisor
   Department of Psychology
   University of Cape Town
   leigh.schrieff-elson@uct.ac.za

3. **Source of Funding or Other Material Support**

   National Research Foundation (NRF)

4. **What is the purpose of this research study?**

   The purpose of this research is to investigate the prevalence of head injuries among boys in the Western Cape; and to investigate their behaviour, emotional outcomes (e.g., feeling happy or angry), executive functioning (e.g., thinking, planning, and flexibility) and exposure to community violence.

5. **What will be done if your child takes part in this research study?**

   You (the parent) will be asked to complete a brief questionnaire about your family, your son's developmental history (such as when your son starting walking and talking), and about his behaviour (such as how well your son interacts with his peers). Your son will be asked to participate in activities which will assess his problem-solving skills and memory. Additionally, your son will be asked about his experiences in your community and how these experiences may influence his behaviour, such as how your son interacts with others, and/or his emotions, such as feelings of sadness or anger.

6. **If your child chooses to participate in this study, how long will he be expected to participate in the research?**

   Completing the questionnaires will take place during one session, which should not last longer than one hour. If at any time during the session your son wishes to stop his participation, he is free to do so without penalty. Your son will not be treated differently at school if he or you decide to withdraw from the study. Withdrawal from the study will not appear on your son's school record or elsewhere.

   Thereafter, your son will be invited back to a second session, where he will be asked to solve problems, such as figuring out a pattern or puzzle, and explaining the meanings of some words.

7. **How many people are expected to participate in the research?**

   200 young men will be invited to participate.

8. **What are the possible discomforts and risks?**

There are slight risks associated with participation in this study. For instance, asking about your son's experiences of exposure to community violence may potentially cause some feelings of distress. Should your son get tired during the study, he will be allowed to rest. If your son wishes to discuss the information above or any discomforts he may experience, you may on behalf of your child contact the Principal Investigators listed in #2 of this form.

9a. What are the possible benefits to you?

You or your son may or may not personally benefit from participating in this study but the findings may help in our understanding of the cognitive, behavioural and emotional outcomes of young men with and without head injuries. Should behavioural problems be identified during the process of this study, your son will be referred to the school counsellor or to the nearest Western Cape Education Department school clinic if there is no counsellor at your son's school.

9b. What are the possible benefits to others?

The information gained from this research study will help improve our understanding of the offending behaviour of young offenders with head injuries.

10. If your child chooses to take part in this research study, will it cost your child anything?

Participating in this study will not cost your child anything.

11. Will your child receive compensation for taking part in this research study?

Your son will receive a R50 Checkers / Pick 'n Pay shopping voucher.

12a. Can your child withdraw from this research study?

Your son is free to withdraw his consent and to stop participating in this research study at any time. If your son does withdraw his consent, there will be no penalty.

If you or your son have any questions regarding your and your son's rights in this research, you may phone the Psychology Department office and get in touch with Rosalind Adams. Her telephone number is 021 650 3417, and her email address is rosalind.adams@uct.ac.za

Alternatively, if you have any questions about the study you or your son may contact the supervisor or researchers at leigh.schrieff-elson@uct.ac.za (supervisor – Dr Leigh Schrieff*),* ninasteenkamp1@gmail.com (student researcher – Nina Steenkamp) and glmzay001@myuct.ac.za (student researcher – Zayaan Goolam Nabi)

12b. If your child withdraws, can information about your child still be used and/or collected?

Information already collected may be used, if permission is granted by both you and your son. We will ask you about the use of your information, if you or your son decide to withdraw from the study.

13. Once personal and performance information is collected, how will it be kept secret (confidential) in order to protect your child's privacy?

Only certain people have the right to review these research records. These people include the researchers for this study. Your son's research records will not be released without your permission unless required by law or a court order. All the information you and your son give will be strictly confidential and data will be anonymised when shared in any reports about the data.

14. What information about you or your child may be collected, used and shared with others?

This information gathered from you will be information on your son's developmental history, records of your responses to questionnaires regarding your son's behaviour, information such as how your son interacts and relates to others, and information about your son's emotions, such as being happy or sad, and how this may influence his behaviour. If you and your son agree to be in this research study, it is possible that some of the information collected might be copied into a "limited data set" to be used for other research purposes. If so, the limited data set may only include information that does not directly identify you or your son. For example, the limited data set cannot include you or your son's name, address, telephone number, ID number, or any other numbers or codes that link you to the information in the limited data set.

15. Signatures

As a representative of this study, I have explained to the participant's parent / guardian the purpose, the procedures, the possible benefits, and the risks of this research study; and how the participant's performance and other data will be collected, used, and shared with others:

_____ _____

Signature of Person Obtaining Consent and Authorization **Date**

You have been informed about this study's purpose, procedures, possible benefits, and risks; and how your son's performance and other data will be collected, used and shared with others. You have received a copy of this form. You and your son are aware that you may ask questions before you sign, and you have been told that you and your son can ask other questions at any time.

You voluntarily agree to allow your son to participate in this study. You hereby authorize the collection, use and sharing of your son's performance and other data. By signing this form, you are not giving away any of your legal rights.

_____ _____

Signature of Person Consenting and Authorizing **Date**

Please indicate below if you would like to be notified of future research projects conducted by our research group:

_____ (initial) Yes, I would like to be added to your research participation pool and be notified of research projects in which I might participate in the future.

Method of contact:

Phone number: _____

E-mail address: _____

Mailing address: _____

_____

Appendix J

Participant Assent Form

UCT Department of Psychology

Participant Assent Form

PERMISSION TO PARTICIPATE IN RESEARCH

We are inviting you to be in our research study. We would like to learn more about head injuries and associated behaviours of young people. In order to do this, we are talking to young people who have had such an injury and also to those who have never had such an injury.

If you agree to be in this study, we will ask you to meet with us twice. During the first session, we will ask you to answer some questions about your life. These may be very personal questions about your behaviour. This session will last approximately 1 hour. During the second session, we will ask you to do pen and paper tasks with us that will help us to understand your thinking and behaviour better. This session will be approximately 2 hours long.

Taking part in this study will not place you at any physical risk, however, during the session you will be asked some questions about community violence which may potentially lead to some feelings of distress. The other activities will not harm you, but some of them may be long and you may feel tired at times. If you do, you can stop and rest at any time. There will be no penalty if you choose not to be part of this study or if you choose to stop being part of it. Other than receiving refreshments during the sessions and being compensated with a R50 Checkers/ Pick ‘n Pay voucher at the end of the second session for your participation, there are no known personal benefits to taking part in this study. You will, however, be helping us to better understand behaviours associated with having a head injury.

Your identity will not be revealed and all the information you give will be strictly confidential. Any information collected will have your name removed so that it is anonymous, and only certain people will have access to the data.

It will only be used for academic research purposes; such as in a research report. No-one will be able to identify you from the research report.

If you sign this paper it means that you would like to take part in this study. If you would not like to take part in this study, you do not have to sign this form. It is up to you. Before you say whether you want to be part of this study or not, I will answer any questions that you may have. If you have a question later that you didn't think of now, you can ask me next time.

You are free to withdraw your permission and to stop participating in this research study at any time. If you do withdraw your consent, there will be no penalty.

If you have any questions regarding your rights in this research, you may phone the Psychology Department office and get in touch with Rosalind Adams. Her telephone number is 021 650 3417, and her email address is rosalind.adams@uct.ac.za .

Alternatively, you may contact the researchers involved in the study, Dr. Leigh Schrieff (leigh.schrieff-elson@uct.ac.za or at 021 650 3708), Nina Steenkamp (researcher; ninasteenkamp1@gmail.com*)* and Zayaan Goolam Nabi (researcher; glmzay001@myuct.ac.za), if you have any questions about the study.

I would like to take part in this study:

Signature of Participant _____ Date _____

Signature of Investigator _____ Date _____

Appendix K

Participant Debriefing Letter

UCT Department of Psychology

Participant Debriefing Letter

Thank you for partaking in this study. Your participation and answers to questionnaires and interviews are appreciated.

Should you have any worries or concerns regarding your participation in this study or feel anxious or unsettled in relation to your participation, you may contact the researchers or their supervisor involved in this study: Dr. Leigh Schrieff (leigh.schrieff-elson@uct.ac.za; Tel: 021 650 3708); Researchers: Nina Steenkamp (ninasteenkamp1@gmail.com) and Zayaan Goolam Nabi (glmzay001@myuct.ac.za). Alternatively, you may contact toll free lines, such as, Child Line (0800 055 555) or SADAG **(**011 234 4837).

This current study is being conduct by a team of UCT postgraduate psychology students. This study aims to investigate the prevalence of head injuries among boys in Western Cape; and to investigate their emotional outcomes, behavioural outcomes, and executive functioning (e.g., thinking, planning and flexibility), as well as their exposure to community violence. Thus, the information gathered from this research will enable greater understanding of head injuries and exposure to community violence in a South African context and can play a role in informing future interventions.

Appendix L

Child Exposure to Community Violence Questions as Assigned by Co-Raters

Question on CECV	Possible Category Options			
	Witness	Victim	Perpetrator	No assigned category
1. Have you heard guns being shot?	X			
2. Have you seen somebody arrested?				X
3. Have you felt unsafe when you were at home?	*			
4. Have you seen drug deals?	X			
5. Have you seen somebody being beaten up?	X			
6. Have you heard grown-ups in your home yell at each other?	X			
7. Have you seen somebody get stabbed?	X			
8. Have you seen somebody get shot?	X			
9. Have you seen a gun in your home?	X			
10. Have you felt unsafe when you were at school?	X			
11. Have you seen grown-ups in our home hit each other?	X			
12. Have you felt unsafe when you are outside your neighbourhood?	*			
13. Have you seen a dead body around your neighbourhood (don't include funerals)?				X
14. Have you seen gangs in your neighbourhood?	X			
15. Have you seen somebody pull a gun on another person?	X			
16. Have you seen somebody in your home get shot or stabbed?	X			
17. Has your house ever been broken into(robbed)?		X		
18. Have you seen somebody pull a knife on another person?	X			
19. Have you seen somebody steal something from another person's house or store?				X
20. Have you ever seen somebody else be forced to do something with their private parts they didn't want to do?	X			
21. Have you ever been threatened to be beat up by a family member?		X		
22. Have you ever been threatened to be beat up by someone outside your family ?		X		
23. Have you actually been beaten up by a family member?		X		
24. Have you actually been beaten up by someone outside your family?		X		
25. Has someone threatened to kill you?		X		
26. Has someone threatened to shoot or stab you?		X		

Question on CECV	Possible Category Options			
	Witness	Victim	Perpetrator	No assigned category
27. Has someone in your family ever touched or kissed you in a way that made you feel uncomfortable?		X		
28. Has someone outside your family ever touched or kissed you in a way that made you feel uncomfortable?		X		
29. Has someone in your family ever made you do something with your private parts or their private parts that you did not want to do?		X		
30. Has someone outside your family ever made you do something with private parts or their private parts that you did not want to do?		X		
31. Have you ever made someone do something with their private parts they did not want to do?			X	
32. Have you ever hurt someone else really badly?			X	
33. Have you ever used something besides your hands to scare or hurt someone (like a gun, knife or other weapon)?			X	
34. Have you known someone who was killed by another person?	X			
35. Have you seen someone being killed by another person?	X			
36. Have you been pinched, kicked or locked up by a family member?		X		
37. Have you been pinched, kicked or locked up by someone outside your family?		X		
38. Have you been in another situation not already described that was frightening or made you think you would die?				X

Note. Questions with a * indicate items did not have full consensus from co-raters.