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The aim of this study was to model pathways to violence propensity and violent behaviour among boys and young men in a high-violence community in South Africa. To that end, 284 young males (11 to 23 years old) from Khayelitsha, Cape Town self-reported risk for engagement in interpersonal violence and criminality; including within family, peer, and school domains, over a 12 month period. In Structural Equation Modelling, a pathway emerged through which an unstable home environment, influenced by deprivation and violence, affects the quality of parenting. In turn, early deviant associations and attitudes toward violence and gangs are cultivated and may have a deleterious effect on schooling, resulting in greater future substance abuse, greater violence propensity, and offending. These findings support the life course perspective approach, emphasising turning points and human agency in the aetiology of violence.

Keywords: developmental trajectories, structural equation modeling, violence-supporting beliefs, violence risk assessment, youth violence

Introduction

At its core, interpersonal violence is a learned behaviour that is sanctioned, reinforced, or simply ignored from early childhood. Household deprivation and childhood poverty and neglect may interact with a lack of self-control to mould a character prone to reactive violent behaviours (Chapple, Tyler, & Bersani, 2005; Sampson & Laub, 2005). For instance, "aggression against others may be motivated by high levels of social inequality, while illicit drug consumption may rather be driven by the availability of respective substances" (Eisner, 2002, p. 207). Moreover, social bonding, social learning, and societal reaction all have potential mediating effects on offending (and re-offending or desistance). In other words, attitudes can inform actions and transitions from a criminal to a noncriminal lifestyle. This study aimed to construct and test an explanatory model of risk to engage in interpersonal violence and criminality (including family, peer, and school domains), among adolescent and young adult males from a historically disadvantaged South African community.

A full understanding of the aetiology of violence requires longitudinal research, following potential perpetrators over time to understand where individual propensities for extreme violence originate. Most recent longitudinal studies of youth violence and deviance in the United States of America (e.g. Hall, Simon, Lee, & Mercy, 2012; Lösel & Farrington, 2012) have employed a public health approach to highlight risk factors within the individual, family, peer, school, and community/societal domains that place an individual at greater risk for deviance and aggression. The bulk of this research has studied deviant behavioural outcomes, with less direct focus on serious violence. Few prospective longitudinal studies explore the antecedents of severe interpersonal violence, since this poses statistical challenges in representative (general) populations. The incidence is too low to serve as a statistically meaningful group for comparison purposes. The result is that we know a fair amount about what places American youth at greater risk of anti-social behaviour (and much of this is put in motion by early childhood); however, we know relatively little about what leads some at-risk youth to employ violence, while the majority do not.

Prospective model of risk for engagement in interpersonal violence and criminality

In this theoretical model (Figure 1), nine constructs explain risk for engagement in interpersonal violence and criminality: household deprivation, violent home environment, harsh/inconsistent parenting, parental involvement, school disengagement, deviant peer associations (factor 1 of the Youth Violence Propensity Scale (YVPS))*,* gang attitudes/affiliations (YVPS factor 2)*,* pro-violence attitude (YVPS factor 3)*,* and involvement in physical fights (YVPS factor 4)*.* The ways in which these variables heighten risk for engagement in interpersonal violence, either independently or collectively, is less well understood in the extant literature.

Household deprivation, violent home environment, and parenting

Household Deprivation[1], lower socio-economic status, or other measures of poverty are predictive of more family instability, inconsistent parenting, and higher potential for family violence. At a societal level, greater inequality, or relative deprivation, is linked with greater interpersonal violence (Moser & McIlwaine, 2006). A background of household deprivation, or poverty, may result in more violence in the home and poorer parenting practices.

A *Violent Home Environment* preconditions children to adversarial interactions with family, friends, and peers (Sutherland, 1939). Moreover, a *Violent Home Environment* may lead some individuals to replicate the
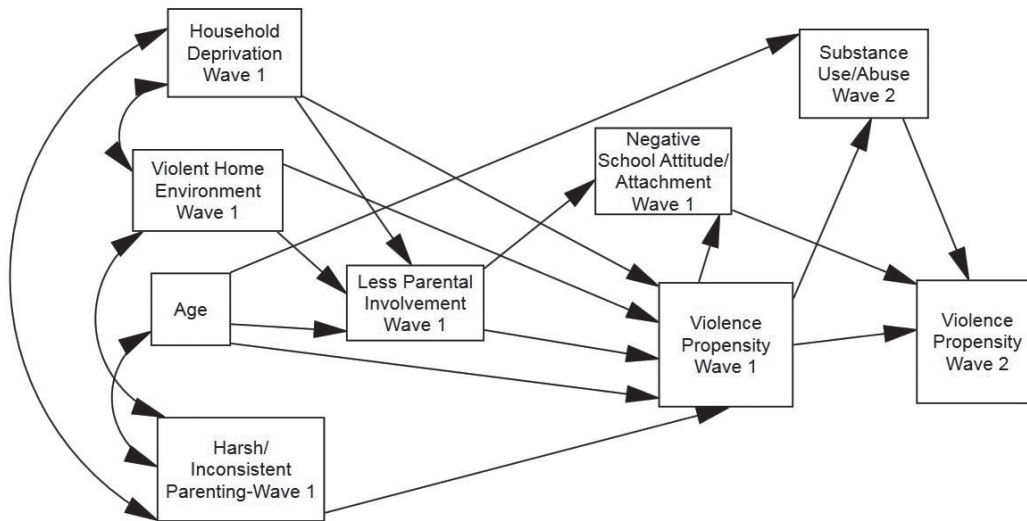
Figure 1. Theorised factors and pathways to Violence Propensity over two longitudinal waves

violent behaviours they have witnessed, while others may choose to reject violence (Loeber & Hay, 1997). A *Violent Home Environment* may also lead youth to seek acceptance and safety outside of the home (Baron, 2003).

As youth *Age* and gain independence, their assessment of their parents' *Harsh/Inconsistent Parenting* will diminish and *Parental Involvement* will decrease. Additionally, *Age* will directly affect use of alcohol and other drugs (*Substance Use/Abuse*) as alcohol becomes legally available and drugs more accessible. Furthermore, *Age* may influence greater *Deviant Peer Associations*, as the company of peers could incline youth to experiment more with deviant or criminal behaviour (Farrington, 1998).

Harsh/Inconsistent Parenting may lead youth to spend more time out of the home without supervision, to seek support and acceptance from peers rather than adults/ parents, and to explore use of substances. For instance, children exposed to *Harsh Parenting* may respond with violence and aggression in conflict situations (Dodge, Greenberg, Malone, & Conduct Problems Prevention Research Group, 2008). Also, ineffective parenting (not monitoring and correcting early aggressive behaviour) would result in children with poor self-control or predilection to impulsivity and immediate gratification (Gottfredson & Hirschi, 1990). Thus, *Harsh Parenting* is theorised to increase *Deviant Peer Associations* and to directly affect *Violence Propensity*, particularly when influenced by a *Violent Home Environment*.

Violent Home Environment and lower *Parental Involvement* with the child may incline children to be less involved with family, school, and prosocial activities (Dodge et al., 2008). *Less Parental Involvement* with a child increases the child's risk for poorer school attachment and performance (Dodge et al., 2008).

School disengagement
School Attachment/Attitude towards Schooling is important for the acquisition of pro-social outcomes. For instance, school attachment is associated with child prosocial behaviour (Ward, Martin, Theron, & Distiller, 2007). Children with high levels of school engagement

are less exposed to risk of victimisation or opportunities for violence perpetration (Hindelang, Gottfredson, & Garofalo, 1978). Children with low school engagement tend to affiliate with gangs and deviant peers (Ward et al., 2007).

The ecology of youth violence in South Africa
Interpersonal violence is widely acknowledged to be one of the most pressing challenges facing contemporary South Africa. There is evidence to suggest that young South African men from black and coloured communities are the most at-risk of becoming both victims and perpetrators of violence (Bruce, Dissel, Gear, & Masuku, 2008; Leoschut, 2009; Prinsloo, Kotzenberg, & Seedat, 2007). It appears that South African youth from poor neighbourhoods lack protection from violence and crime, lack constructive activities outside of school hours, and have limited social and family support systems, particularly healthy, adult male relationships (Ward, Dawes, & Matzopolous, 2012). As a result of these socialisation deficits, South African youth from low social and economic status (SES) backgrounds are often the victims and/or perpetrators of violence (Foster, 2012). As perpetrators, young males may subscribe to a hegemonic philosophy of masculinity (Morrell, Jewkes, & Lindegger, 2012); including the exertion of control over their immediate environments through the use of sometimes-violent force.

Goal of the study
This study has sought to test a theoretical model (Figure 1) comprising factors influencing violence propensity at two points in time. The primary research question was: What factors and relationships delineate pathways to violence propensity among male South African youth?

Method
Study design
This article makes use of data from a two-wave study of a sample of boys and young men designed to follow the violence trajectories (and contributory factors) of study participants over a 12-month period (see Figure 2). The
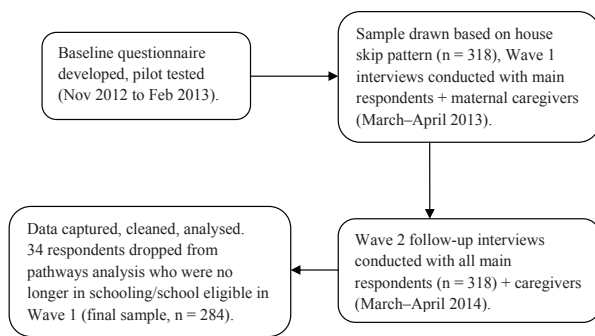
Figure 2. Study design flow chart

first set of interviews (Wave 1) were conducted in March 2013 and the second set (Wave 2) in March 2014.

Participants and setting

Participants were 284 volunteers drawn from a population of males living within a 600-meter radius of a youth development project in Khayelitsha, Cape Town. The age range in Wave 1 was eleven to 23 with a mean age of 16.4 (SD = 2.5). All participants were in schooling, eligible to be in schooling, or in some form of alternative education/training in Wave 1. By Wave 2, about 77% of the participants had failed at least one year of school over their careers, 11% had dropped out before reaching grade 12 (the final year of high school), 3% failed their grade 12 matric (high school exit) examinations, and 13% had successfully completed matric.

The demographic information of the participants partially reflect the high levels of poverty in the community, with 33% of the participants reporting living in informal housing (shack dwellings) and 6% in any form of employment. In Khayelitsha, about 79% of all households receive some form of government support grant. Twenty-six percent of the participants reported that their fathers were deceased and 13% reported that their mothers were deceased. About 72% reported that they had witnessed someone stabbed or shot at least once, and 18% reported having been assaulted in the past twelve months. A significant number of study participants reported that a family member had been to prison (20%) and 28% reported visiting *shebeens* (informal alcohol establishments) on a daily or weekly basis. About 27% of the participants reported having spent R100 (approximately 7 USD) or more on alcohol in the past week. This is a significant amount considering that, according to official census data, 74% of all Khayelitsha households report a monthly income of R3 200 or less (equivalent to R105 or 7.50 USD per household per day) (City of Cape Town, 2013).

Measures

The household/parenting, risk propensity, and lifestyle measures were drawn from two nationally representative youth studies conducted in South Africa: the Youth Risk Behaviour Study (Reddy et al., 2003) and the National Youth Lifestyle Study (Leoschut, 2009).

Household deprivation, violent home environment, and parenting

Household Deprivation included five items (α = 0.70, M = 0.74, SD = 0.63), such as: 'In the last 12 months, how often have you or hour household gone without enough food to eat?' Response options ranged from 0 = never, to 4 = always.

Violent Home Environment included four items (α = 0.69, M = 1.31, SD = 0.35), such as: 'In your lifetime, how often have arguments in your household led to violence?' Response options ranged from 1 = never, to 3 = often.

Harsh/Inconsistent Parenting included six items (α = 0.62, M = 1.92, SD = 0.49), such as: 'How often do any of your parents/caregivers shout at you?' Response options ranged from 1 = never, to 4 = often.

Less Parental Involvement included nine items (α = 0.62, M = 1.38, SD = 0.32), such as: 'How often do any of your parents/caregivers check or ask whether you have done your homework?' and 'My parents/caregivers show their interest in my friends'. Response options ranged from 1 = often to 4 = never.

Violence risk propensity

The YVPS is comprised of four factors: *Deviant Peers*, *Positive Attitude toward Gangs*, *Positive Attitude toward the use of Violence*, and a measure of self-reported *Physical Fighting in the past 12 months*. Details of the development and validation of this scale are provided in a separate article (Edelstein, 2018). *Deviant Peer Associations* included seven items (α = 0.80, M = 0.61, SD = 0.60 in Wave 1; and α = 0.88, M = 0.72, SD = 0.66 in Wave 2), such as: 'I do not want to know any details but do any of your friends regularly use or sell drugs?' and 'Have any of your friends dropped out of school?' Response options ranged from 0 = none of my friends, to 4 = five or more friends. *Positive Attitude toward Gangs* included six items (α = 0.67, M = 0.13, SD = 0.26 in Wave 1; and α = 0.80, M = 0.68, SD = 0.49 in Wave 2), such as: 'Some of my friends at school belong to gangs' and 'People think I'm a gangster' Response options ranged from 0 = strongly disagree, to 4 = strongly agree. *Positive Attitude toward the use of Violence* included six items (α = 0.71, M = 0.79, SD = 0.50 in Wave 1; and α = 0.83, M = 0.79, SD = 0.41 in Wave 2), such as: 'A guy shows he really loves his girlfriend if he gets in fights with other guys about her.' and 'If you mess with me/my friends, you will get hurt'. Response options ranged from 0 = strongly disagree, to 4 = strongly agree.

Violence Propensity, as measured through the YVPS, is used as a proxy for actual use of violence as this is difficult to measure due to inconsistent and under-reporting of serious violence perpetration and its potential infrequency in prospective studies with largely random samples (Edelstein, 2018). That said, actual participant reports of engagement in violent behaviour are measured along with an assessment of the youth's risky/dangerous behaviour from the primary maternal caregiver. These measures, though incomplete or potentially under-reported on their own, serve as a means of triangulating the veracity of the YVPS and its sub-scale measures.

Lifestyle

Negative School Attitude/Low School Attachment included eight items (α = 0.80, *M* = 1.57, SD = 0.40), such as: 'Getting good grades is very important to me' and 'Most of my teachers notice when I am doing a good job and let me know about it'. Response options ranged from 1 = strongly agree, to 4 = strongly disagree.

Maternal Assessment of the Youth's Risky/Dangerous Behaviour included nine items (α = 0.76, *M* = 2.09, SD = 0.67), such as: 'How often do you fight with your son about having bad or dangerous friends?' Response options ranged from 1 = never, to 5 = almost always.

Substance Use/Abuse (*M* = 0.69, SD = 1.71 in Wave 1; and *M* = 0.83, SD = 1.71 in Wave 2) is a combination of the frequency (daily, weekly, or monthly) of self-reported alcohol use and multiple drug use (four separate categories including marijuana use, sniffing glue or other inhalants to get high, tik/methamphetamine use, or use of any other drugs). Combined scores can range from 0 (no substance use), to 15 (daily use of all 5 substances).

Serious/Violent Offending past 12 months (*M* = 0.39, SD = 1.20) is a combination of frequency measures of engagement in the following seven acts in the past twelve months:

- carried a gun, knife or weapon for protection;
- used force threats or a weapon to steal money or something else from somebody or said that you would hurt somebody if they did not do what you told them to;
- got into or broke into a house/building to try to steal something;
- set fire or tried to set fire to something on purpose;
- forced anyone to engage in sexual activity with you when they did not want to;
- used a weapon to threaten or injure someone else; and
- been involved in any gang fights.

Response options for each affirmative response are: 1 = once only, 2 = two or three times, 3 = four to five times, and 4 = six or more times. Scores can range between 0

(no incidence of offending in the past twelve months), and 28 (six or more incidences of offending in all seven categories).

Procedure

The research design and questionnaire were approved by the University of Cape Town Centre for Social Science Research Ethics Committee (clearance number 1-2012). A parent or guardian granted informed, written consent for those participants 16 and younger. Data were collected with the assistance of trained field interviewers. All interviews were conducted in the participants' homes and in complete confidentiality.

Data analysis

The data were mapped utilising Structural Equation Modelling (SEM). The study variables (from Figure 1) were then tested in a series of predictive structural equation models.

SEM allows for testing a theory based on multiple outcomes and multiple pathways. It can provide a series of model fit statistics, to assess the fit of the model to the data, and generate a visual representation of the factors, pathways, and standardised coefficients that comprise the measurement model. SEM (AMOS version 24) can also provide indicators for multivariate normality which is critical to address in order to meet the assumption of normality necessary for generalising effects to a larger population. One drawback of SEM is that the method does not allow for sample re-weighting. The theoretical model was first tested for fit against the data and two alternate models, with the inclusion of self-reported *Offending* and the *Maternal Assessment*, were then tested to explore alternative outcome measures. Similar model fit statistics and correlation with the self-reported *Offending* outcome would offer evidence of accurate respondent disclosure in the YVPS. Significantly higher fit statistics in the *Maternal Assessment* model would suggest that participants may be under-reporting.
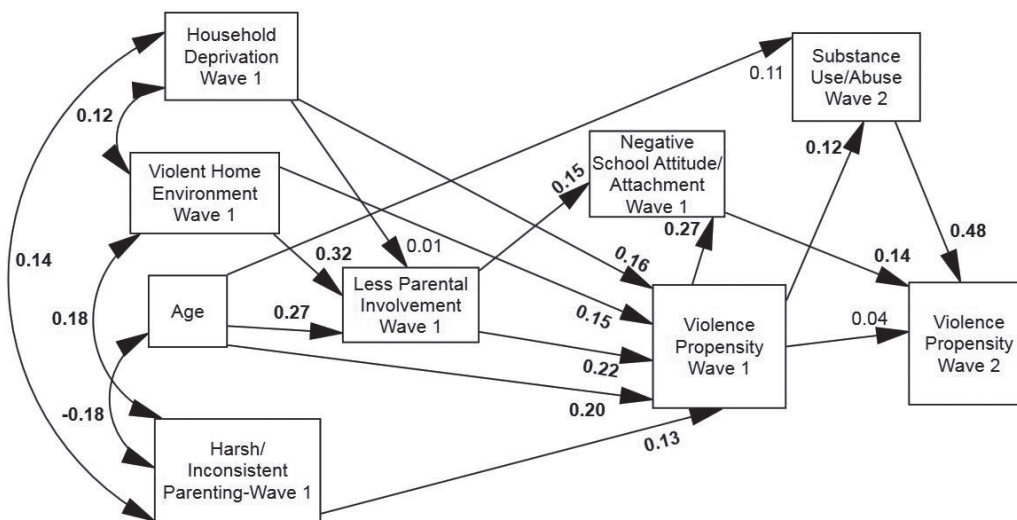
Standardised coefficients reported. Fit statistics: Chi-square = 20.45. df = 17. X²/df ratio = 1.20. p = 0.252. CFI= 0.987. RMSEA= 0.027. N= 284. Hoelter's *(p* = 0.05) = 382. Multivariate normality = 5.33 (critical ratio: 3.19). *Note:* Coefficients in bold indicate *p* ≤ 0.05 (two-tailed). No error terms are correlated.

Figure 3. Structural Equation Model 1

Results

In the first measurement model (Figure 3) fit statistics indicated an excellent fit to the data: Comparative Fit Index (CFI) = 0.987 (above 0.90 is regarded as a good fit, above 0.95 as excellent [Byrne, 2016]), Root Mean Square Error of Approximation (RMSEA) = 0.027 (below 0.03 is an excellent fit [Byrne, 2016]), Hoelter's test at $p = 0.05$ is 382 (above 200 is acceptable, above 300 preferable [Byrne, 2016]), Chi-square = 20.45 with 17 degrees of freedom, resulting in X^2/df ratio=1.20 (less than 4 is good, less than 2 is excellent [Byrne, 2016]).

Household deprivation, parenting and violent home environment

Among the demographic variables, *Household Deprivation* co-varies with *Violent Home Environment* ($\beta = 0.12$, $p = 0.049$) and with *Harsh/Inconsistent Parenting* ($\beta = 0.14$, $p = 0.02$), suggesting their inter-relationships. *Violent Home Environment* co-varies with *Harsh/Inconsistent Parenting* ($\beta = 0.18$, $p < 0.01$). Additionally, *Age* negatively co-varies with *Harsh/Inconsistent Parenting* ($\beta = -0.18$, $p < 0.01$), meaning that older study participants report less harsh parenting, likely driven, in part, by less active parenting, overall, among late teenage/early 20's respondents.

Less Parental Involvement is, in turn, strongly associated with a more *Violent Home Environment* ($\beta = 0.32$, $p < 0.001$) and conditioned by *Age* ($\beta = 0.27$, $p < 0.001$), with older individuals much less likely to report high levels of *Parental Involvement*. *Household Deprivation* was theorised to influence *Parental Involvement* but this direct relationship is not significant ($\beta = 0.01$, $p = 0.82$).

Next, the YVPS, as measured in Wave 1, is driven by *Household Deprivation* ($\beta = 0.16$, $p < 0.01$), *Violent Home Environment* ($\beta = 0.15$, $p < 0.01$), *Harsh/Inconsistent Parenting* ($\beta = 0.13$, $p = 0.02$), *Less Parental Involvement* ($\beta = 0.22$, $p < 0.001$), and conditioned by *Age* ($\beta = 0.20$, $p < 0.001$); with older participants reporting higher YVPS Scores in Wave 1. Thus, all theorised demographic constructs were shown to directly and significantly correlate with the YVPS, as measured in Wave 1.

School disengagement and substance use

Negative School Attitude/Low School Attachment in Wave 1 is, in turn, driven by *Less Parental Involvement* ($\beta = 0.15$, $p < 0.01$) and the YVPS Wave 1 ($\beta = 0.27$, $p < 0.001$). The pathway from YVPS Wave 1 to *Negative School Attitude* Wave 1 was specified because school attitudes are assumed to be more short-term and current than the violence-propensity measure and its constituent elements.

The right side of the model incorporates Wave 2 outcomes, driven by Wave 1 measures. Here, *Substance Use/Abuse* Wave 2 is driven by the YVPS Wave 1 ($\beta = 0.12$, $p = 0.05$) and conditioned by *Age* ($\beta = 0.11$, $p = 0.07$), as older individuals are more likely to have exposure and access to alcohol. The relationship between the YVPS Wave 1 and *Substance Use/Abuse,* as measured a year later, is potentially important as it delineates a pathway between earlier aggression, deviant peer associations and violence-supporting attitudes, and subsequent high-risk behaviour (more frequent use of drugs and alcohol).

Violence propensity prediction

Finally, the YVPS Wave 2 is directly explained by *Negative School Attitude* in Wave 1 ($\beta = 0.14$, $p = 0.01$) and is strongly conditioned by *Substance Use/Abuse* in Wave 2 ($\beta = 0.48$, $p < 0.001$). The Wave 1 YVPS measure is theorised to influence the YVPS in Wave 2 but this direct effect is negligible ($\beta = 0.04$, $p = 0.49$). However, the indirect effect of the YVPS in Wave 1, as mediated by *Negative School Attitude* and *Substance Use/Abuse*, results in a total effect that is significant at the $p < 0.10$ level ($\beta = 0.13$, $p < 0.10$). *Age*, *Household Deprivation*, *Violent Home*, *Harsh Parenting*, and *Less Parental Involvement* all exhibit non-significant indirect effects on YVPS Wave 2.

Serious offending and maternal assessment

In the second SEM (Figure 4), the additional outcome of self-reported *Serious/Violent Offending past 12 months* in Wave 2 was included. It should be noted that this offending measure is highly skewed (4.47, c.r. = 30.78) and kurtotic (25.47, c.r. = 87.63). Thus, overall fit statistics
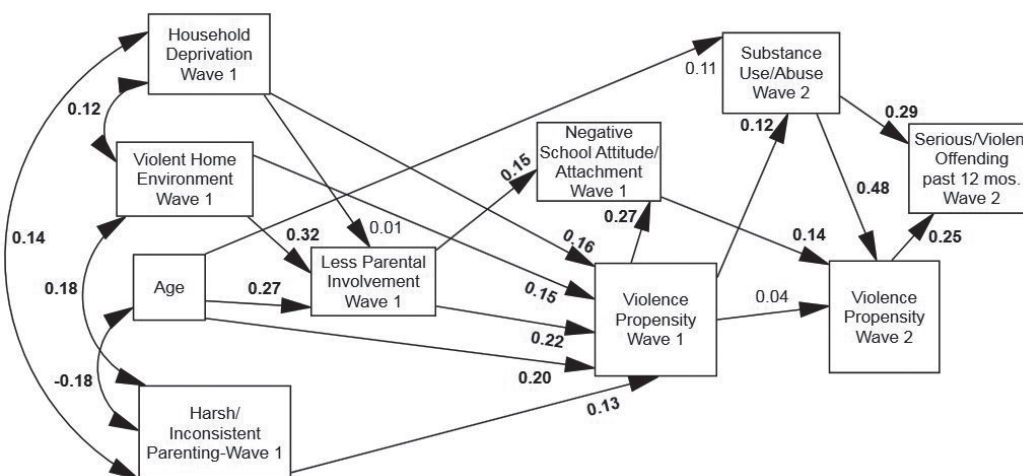
Standardised coefficients reported. Fit statistics: Chi-square= 28.93. df = 24. X^2/df ratio = 1.21. p = 0.223. CFI = 0.99. RMSEA= 0.027. n = 284. Hoelter's ($p = 0.05$) = 357. Multivariate normality = 26.03 (critical ratio: 14.16). *Note.* Coefficients in bold indicate $p \leq 0.05$ (two-tailed). No error terms are correlated.

Figure 4. Structural Equation Model 2

are negatively affected, yet still indicate an acceptable fit to the data: CFI = 0.99, RMSEA = 0.027, Hoelter's test at $p = 0.05$ is 357, Chi-square = 28.93, with 24 degrees of freedom; resulting in X^2/df ratio = 1.21. Pathway coefficients leading to YVPS Wave 2 are not meaningfully altered from the previous model.

Serious/Violent Offending in Wave 2 is strongly associated with the YVPS Wave 2 ($\beta = 0.25$, $p < 0.001$) and *Substance Use/Abuse* Wave 2 ($\beta = 0.29$, $p < 0.001$). YVPS Wave 1 ($\beta = 0.07$) and *Negative School Attitude* Wave 1 ($\beta = 0.03$) both exhibit small indirect effects on the offending outcome mediated by *Substance Use/Abuse* and the YVPS Wave 2.

In the third and final SEM, the *Maternal Assessment* Wave 2 was inserted in place of the YVPS Wave 2 to test for the strength of triangulation between the participant's self-reported YVPS and *Serious/Violent Offending* and the primary *Maternal Caregiver's Assessment*.

Due to eleven cases with missing data for the *Maternal Assessment*, multivariate normality could not be obtained. The overall model again indicated an acceptable fit to the data: CFI = 0.99, RMSEA = 0.021, Hoelter's test at $p = 0.05$ is 382, Chi-square = 27.02 with 24 degrees of freedom; resulting in X^2/df ratio = 1.13. Fit improvement from the second model (Figure 3) with YVPS Wave 2 was insignificant.

Here, the influences of YVPS Wave 1 and *Negative School Attitude* Wave 1 were negligible on the *Maternal Assessment* in Wave 2. However, there remains a significant association between *Substance Use/Abuse* Wave 2 and the *Maternal Assessment* ($\beta = 0.42$, $p < 0.001$). The *Maternal Assessment* is, likewise, associated with self-reported *Offending* in Wave 2 ($\beta = 0.14$, $p = 0.02$). Although the maternal caregiver may not know (or may be unwilling to report) the extent of risky behaviour that her child is involved in, drug and alcohol use are more easily detected by caregivers when the study participants come home. The stronger linkages seen between the YVPS Wave 2 and *Substance Use* and *Offending* suggest that the YVPS is a superior proxy indicator of violence potential (than the *Maternal Assessment*, in this case).

Discussion

The three structural equation models tested affirm a relationship between family-level background factors, early risky behaviours and associations, school attitude/ attachment, substance abuse, and later violence-potential. Linkages between participant-reported violence-risk, as assessed in the YVPS, and self-reported *Offending* and the *Maternal Assessment* substantiated the use of the YVPS as a key outcome measure.

The family background constructs of *Household Deprivation*, *Violent Home Environment*, *Harsh/ Inconsistent Parenting* and low *Parental Involvement* and the contemporaneous measure of *Negative School Attitude* correlated with *Violence Propensity*. This early *Violence Propensity* and *Negative School Attitude* were associated with future *Substance Use/Abuse*, as measured a year later. In turn, *Substance Use/Abuse* correlated highly with self-reported *Offending* and contemporaneous *Violence Propensity*. In other words, prior violence propensity (compounded by risks in family and peer domains) does not directly predict future violence propensity; the effect of that violence-risk on school attachment (normative, institutional socialisation) and subsequent alcohol/drug use appears to contribute to potential violent offending in the future.

In a nationally representative sample of over 9 000 15-26 year-old Americans, Reingle, Jennings, and Maldonado-Molina (2012) found that low parental involvement was a robust predictor of future violence, even after controlling for the mediating effects of subject behaviour. Social disorganisation (neighbourhood effects) did not predict future violence in Reingle and colleagues' (2012) study; however, social learning, the influence of parents, and peers did influence trajectories of violence. Their findings underscore the importance of family and peer domains in the development of anti-social trajectories. This is largely consistent with the centrality of parental involvement, school attachment, and peer associations to violence propensity, as found in the present study.

Additionally, Reingle and colleagues (2012) found evidence that reported peer use of alcohol predicted both
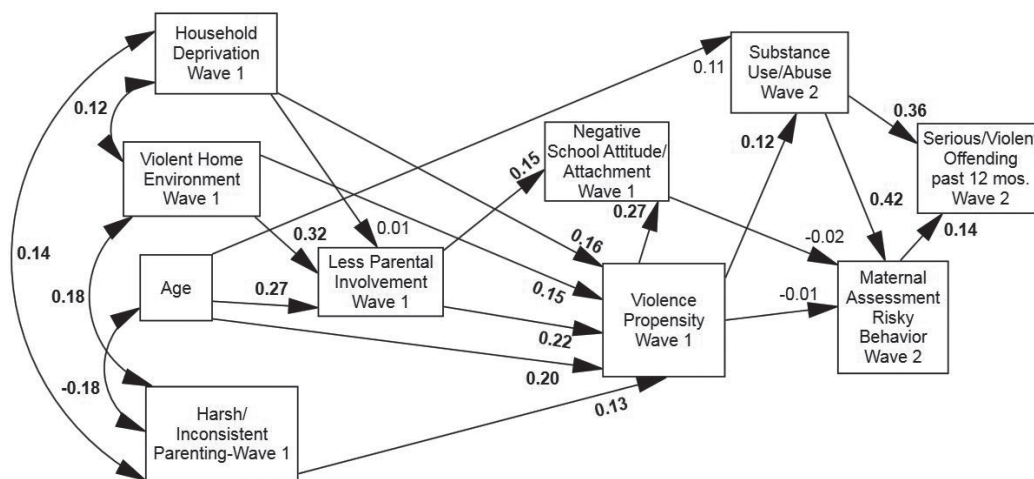
Standardised coefficients reported. Fit statistics: Chi-square = 27.02. df = 24. X^2/df ratio = 1.13. p = 0.303. CFI = 0.989. RMSEA = 0.021. n = 284. Hoelter's ($p = 0.05$) = 382. Multivariate normality could not be assessed due to cases with missing data. *Note:* Coefficients in bold indicate $p \leq 0.05$ (two-tailed). No error terms are correlated.

Figure 5. Structural Equation Model 3

violence escalation and violence desistance; they also found evidence of late-onset violence, contradicting the age-crime curve theory which states that most adolescence-limited offenders age out of violence by their mid-20's. Such conflicting findings in large scale longitudinal studies highlight both the complexity of prospective violence research, itself, and the turning points and human agency emphasised in the life course perspective (Sampson & Laub, 2005).

In the present study, a pathway emerges through which an unstable home environment, influenced by deprivation and violence among family members, affects the quality and consistency of parenting. In turn, early deviant associations and attitudes toward violence and gangs are cultivated. These influences may have a deleterious effect on an individual's orientation toward the future and the present value of investment (in schooling) for delayed gratification (better future employment/higher education prospects). In this void, substance use and violent behaviours may flourish, particularly in communities characterised by high ambient violence. This delineates a pathway to violence potential through school detachment and future discounting (Brezina, Tekin, & Topali, 2009). This pathway bears similarity to that tested by Dodge and coleagues (2008) through their dynamic cascade model predicting adolescent violence over a twelve year period. As Dodge and colleagues (2008, p.6) describe:

> *... the model is one in which a high-risk child traverses a deepening stream across development toward a violent outcome, with each stage of development being predicted partially from previous events and providing growing inevitability toward the violent outcome, but also offering a new opportunity to begin a different tributary toward a nonviolent outcome.*

Limitations

With only two data points over a twelve month period, there is a question of the chronological ordering of certain measures for older participants who might have exited schooling during the period of study. However, relatively few study participants completed schooling by age 18 (twelve study participants, or 4%, passed grade 12; and three or 1% failed grade 12 by the age of 18), and more than 75% had failed at least one grade, meaning that secondary schooling was, effectively, extended into early adulthood. In Wave 1, 93% (264) participants were still in school, 5% (14) had completed matric and were involved in further studies, 1% (4) had failed matric and were involved in further studies, and 0.7% (2) had dropped out (although they were still eligible to return to school). Furthermore, by the end of the study period, none of the participants were living independently from a primary caregiver/provider. Thus, parental involvement (in schooling, further studies, or support in general) and school attachment were still viable constructs for all study participants.

Future studies should incorporate larger sample sizes and additional study Waves and measures of triangulation to pinpoint the actual onset, incidence, intensity, duration,

and desistance of violent behaviour. Ideally, a longitudinal-experimental study design should be implemented in a similar high-violence, developing country context, such as Khayelitsha. This would allow for pro-social and anti-social/violent pathways to be mapped alongside the effects of targeted intervention(s), generating a base of evidence of what works to alter violent trajectories in the global south.

Conclusion

The findings from this study suggest quality of parenting, school and peers' affiliation influence high-risk and anti-social behavior among South African youth from disadvantaged backgrounds. The findings suggest a need for targeted interventions to address parenting deficits and early deviant peer associations harmful to the development of prosocial behaviours among children from disadvantaged backgrounds.

Endnotes

1 Constructs developed and measured in this research are capitalised and italicised for identification purposes, to avoid confusion with reference to these real-world concepts.

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