

Violence Exposure in South African Adolescents: Differential and Cumulative Effects on Psychological Functioning

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Abstract

This study examined the associations between different types of violence victimization and psychological functioning in South African adolescents. Both differential and cumulative effects of violence were investigated. A multi-ethnic (Black, White, people of mixed heritage, and people of Indian/Asian descent) sample of adolescents in secondary schools in the Western Cape Province ($N = 1,574$; boys = 46.5%, girls = 53.5%; $M_{\text{age}} = 16$ years) completed a survey on their experiences of exposure to violence (across different contexts and polyvictimization) and their levels of hopelessness, anxiety, depression, perceived stress, and suicidal ideation. The results showed that indirect and direct victimization in the community, and indirect political victimization were consistent predictors for adverse psychological functioning, whereas victimization in home and school contexts did not emerge to be significant.

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Polyvictimization had a consistent linear effect on psychological symptoms. Interventions in South Africa should focus on addressing the psychological effects of community and political victimization on adolescents. Adopting a holistic treatment approach would be useful to gain a comprehensive understanding of adolescents' victimization experiences and maximize the impact of support to enhance their psychological functioning.

Keywords

violence exposure, mental health and violence, youth violence, community violence

Reducing violence exposure is a global public health priority, particularly with respect to promoting health and well-being in adolescents (World Health Organization [WHO], 2014). Violence is a significant risk factor for adverse psychological functioning in adolescents (WHO, 2014). South African adolescents are at increased risk of psychological maladjustment due to the country's alarmingly high rates of crime and violence. On a daily basis, an average of 51 cases of murder, 142 cases of sexual offense, and 452 cases of common assault are recorded (South African Police Service, 2016). Within a violence-prone environment, interpersonal violence encountered by South African adolescent boys and girls is 8 and 5 times higher than the global average, respectively (Norman, Matzopoulos, Groenewald, & Bradshaw, 2007). At the same time, mental health programs for youth in South Africa are inadequately funded and sourced (Lund, Boyce, Flisher, Kafaar, & Dawes, 2009; Petersen, Swartz, Bhana, & Flisher, 2010), which adds to these adolescents being at higher risk of psychological vulnerabilities because they are unable to access adequate mental health support in instances of victimization. Given the limited resource setting in South Africa, it is imperative to examine the psychological effects of violence on adolescents to inform future violence reduction and health interventions.

Violence Exposure Across Contexts

Violence can be experienced indirectly (witnessing or hearing about violence that happened to others) or directly (personal experience of intentional acts initiated by another person to cause harm) and across different contexts in an adolescent's life, such as home (e.g., domestic violence; Hindin & Gultiano, 2006), school (e.g., bullying; Perren, Dooley, Shaw, & Cross, 2010), community (e.g., violent crime; McDonald, Deatrck, Kassam-Adams, & Richmond,

2011), and a context of violence motivated by political reasons (e.g., Israeli–Palestinian conflict; Boxer et al., 2013). A study in the Western Cape Province of South Africa found that almost all adolescents (98.9%) had witnessed community violence, 40.1% had been a direct victim of community violence, 76.9% had witnessed home violence, 58.6% had been a direct victim of home violence, and 75.8% had had either direct or indirect exposure to school violence (Kaminer, du Plessis, Hardy, & Benjamin, 2013).

In addition, owing to the colonial history of South Africa, the younger generations may have heard stories of the brutality and discrimination that happened during Apartheid,¹ against their relatives, friends, or someone they know. The Apartheid regime in the past has contributed to the persistent disparities in people's socioeconomic status, health, and access to health care across ethnic groups in contemporary society, including mental health outcomes (Coovadia, Jewkes, Barron, Sanders, & McIntyre, 2009). More specifically, the legacy of Apartheid is reflected in the inequitable mental health status of young South Africans—in a sample of adolescents in Cape Town, anxiety, depression, and posttraumatic stress disorder are more significantly associated with adolescents in historically disadvantaged ethnic groups (Black and people of mixed heritage) than with White adolescents (Das-Munshi et al., 2016).

The Effects of Violence on Psychological Functioning

From a developmental perspective, adolescents may be particularly vulnerable for the psychological effects of violence, because mental health problems are likely to emerge during this stage in life due to the maturational changes that occur in the brain (Botticello, 2009; Paus, Keshavan, & Giedd, 2008). Violence exposure has been found to disrupt adolescents' adaptive psychological functioning in many ways. For example, because violence is inherently stressful (Mrug, Loosier, & Windle, 2008), it may interfere with and exacerbate exposure to daily stressors and disrupt a normative stress adaptation process (Heinze, Stoddard, Aiyer, Eisman, & Zimmerman, 2017). Violence exposure may further dampen individuals' goals and aspirations and elicit feelings of hopelessness through perceptions that there are few pathways for recovery and progress in life (Bonanno, 2007). Moreover, depression and anxiety are common symptoms in adolescents exposed to violence (Bach & Louw, 2010; Mrug et al., 2008; Mrug & Windle, 2010), which may lead to suicidal ideation and suicide attempts (Bonanno, 2007; Pillai, Andrews, & Patel, 2009). Globally, suicide is one of the leading causes of mortality among

young people (McKinnon, Gariépy, Sentenac, & Elgar, 2016), and violence exposure may increase the risk of suicidal ideation in adolescents (Bonanno, 2007; Saewyc & Chen, 2013). In addition, when the psychological problems experienced in adolescence are not identified and treated in an early stage, they may persist and have a direct impact on adolescents' future functioning and mental health in adulthood (Botticello, 2009; Bruwer et al., 2014; Das-Munshi et al., 2016). Given the impact violence exposure has on adolescents' long-term psychological functioning, it is important to understand these effects of violence to inform mental health interventions.

Relatively less research has cut across multiple contexts to investigate the effects of violence (Dubow et al., 2010). Yet, violence may have differential effects on adolescent psychological functioning depending on the particular context in which the victimization occurs. Mrug et al. (2008; Mrug & Windle, 2010) found that violence that occurs in proximal contexts, such as home and school, produces more harmful psychological effects (anxiety and depression) than violence exposure in distal environments such as community. Home and school are the major developmental domains in an adolescent's life and the exposure in these contexts may undermine the quality of important relationships. The resulting absence of secure and supportive relationships may thus foster negative psychological symptoms (Mrug et al., 2008; Mrug & Windle, 2010). Examining the differential effects of violence exposure across multiple contexts may enhance the understanding of the environment in which the adolescents are vulnerable to psychological maladjustment and provide refined and targeted recommendations for mental health care.

Polyvictimization

Traditionally, research on victimization has focused on discrete and single types of violence (e.g., sexual violence) without investigating the other exposures that the same children or adolescents may encounter (Finkelhor, Ormrod, & Turner, 2007; Finkelhor, Turner, Hamby, & Ormrod, 2011). This can potentially fail to obtain the full victimization profile as violence is rarely an event in isolation; instead, victimization experiences are interconnected and may cluster and occur concurrently (Finkelhor, Ormrod, Turner, & Holt, 2009; Finkelhor et al., 2007; Finkelhor et al., 2011; Kaminer et al., 2013; Leoschut & Kafaar, 2017). Adolescents who are exposed to one form of violence are at increased risk to be exposed to violence in other forms, suggesting that victimization experiences can accumulate (Finkelhor et al., 2007). The exposure to multiple and different types of violence is known as polyvictimization (e.g., Finkelhor et al., 2007) and is a common experience for South African adolescents (Kaminer et al., 2013). In a nationally representative

sample of 15- to 17-year-old South Africans, 64% had experienced two or more different types of victimizations ever in their lives, and 35.4% had experienced five or more types of different victimizations (Leoschut & Kafaar, 2017). More information on the effects of polyvictimization on adolescents is needed in South Africa as most research is conducted in the United States and European countries (Pereda, Guilera, & Abad, 2014).

Polyvictims are particularly at high risk of maladjustment in psychological functioning and significant associations have been found between polyvictimization and anxiety, depression, and perceived stress in children and adolescents (Gustafsson, Nilsson, & Svedin, 2009; Heinze et al., 2017; Latsch, Nett, & Humbelin, 2017; Soler, Paretila, Kirchner, & Forns, 2012). More specifically, an increasing number of victimization is associated with a parallel increase in psychological maladjustment (Ellonen & Salmi, 2011; Finkelhor et al., 2007; Mrug et al., 2008).

However, the relationship between polyvictimization and psychological functioning is not always linear. Mrug et al. (2008) observed a quadratic function, that is, an inverted U-shaped curvilinear effect between polyvictimization and anxiety and depression in adolescents, represented by an initial linear increase in symptoms at low to moderate levels of violence exposure (0-3 victimizations), and then leveling off and reaching a plateau at moderate levels (4-9 victimizations), followed by a slight decrease at high levels of exposure (10-12 victimizations). Similarly, Morales and Guerra (2006) found that cumulative stress experienced by children in family, school, and community showed an initial linear increase in depression until the three stressor level (exposure to three types of stress across contexts) and then a leveling off in depression scores between three and six stressors. Although the quadratic relationship between polyvictimization and psychological functioning has not yet been explored in South Africa, a study found that exposure to community violence was generally higher in South African children compared with American children. The South African sample experienced less psychological distress than their American counterparts, which could be due to South African children viewing community violence as normative and perceive it as less intense (Shields, Nadasen, & Pierce, 2013). Thus, it may be possible that South African adolescents in the current sample experience less negative psychological symptoms when the number of violence exposure reaches a certain threshold, as they become psychologically desensitized to polyvictimization.

The Present Study

Although there have been many studies focusing on the psychological effects of a single type of violence (e.g., community violence, Chen, 2010;

McDonald et al., 2011; bullying, Perren et al., 2010), researchers are calling for the need to measure violence exposure and its adverse effects in a more comprehensive fashion, as violence in its different forms and across different contexts may be differentially associated with psychological functioning (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009; Kadra, Dean, Hotopf, & Hatch, 2014).

Given the high prevalence of violence in contemporary South Africa, South African adolescents can be directly or indirectly exposed to violence across major domains in their lives, namely, home, school, community, as well as experiencing politically driven violence. Moreover, they can experience polyvictimization across these contexts. Examining the differential and cumulative effects of violence across contexts will enhance the understanding of the circumstances in which the adolescents are at risk of the key psychological correlates informed by the literature, such as hopelessness, anxiety, depression, perceived stress, and suicidal ideation. This may provide insight into the prevention of future adverse functioning in adolescents and inform policies and mental health interventions in South Africa.

In this article, we examine the associations between different types of violence exposure and the psychological functioning in South African adolescents. We investigate the effects of violence exposure across multiple contexts in South African adolescents' lives (home-, school-, community-, and political victimization) on indices of psychological functioning, namely, hopelessness, anxiety, depression, perceived stress, and suicidal ideation. We also explore the cumulative effects of polyvictimization on psychological functioning, by modeling both linear and quadratic relationships between these variables. Based on the literature, we hypothesize the following: Violence exposure in proximal contexts (home and school) and polyvictimization are associated with negative psychological functioning in adolescents. We expect an inverted U-shaped curvilinear effect of polyvictimization on psychological functioning, as indicated by an initial rise in the levels of psychological symptoms then a leveling off and/or decrease in the levels of symptoms as the number of violence exposure increases.

Method

Participants

The final sample consisted of 1,574 adolescents from Grades 8 to 11 (this covers the age range 13-20 years in the South African context; boys = 46.5%; girls = 53.5%). Their age ranged between 12 and 22 years ($M = 16$ years for both boys and girls, $SD = 1.59$ and 1.55 , respectively). Blacks were 40%,

51% were people of mixed heritage, 1.6% were people of Indian/Asian descent, and 6.9% were White. 22% lived in rural area, 27.6% lived in urban area, and 21.1% lived in peri-urban. The majority lived in formal dwellings² (81.6%). Most participants' father/male guardian and mother/female guardian were employed (70.3% and 63%, respectively).

Procedure

The study was approved by the Ethics Committee of the Medical Research Council in South Africa. Data were collected by the fourth author in 2011 and 2012. A two-stage cluster sampling procedure was used (see also Kann et al., 2014). In Stage 1, a list of public schools in the Western Cape Province was obtained from the South African National Department of Education. Next, 23 public schools were selected with a probability proportional to student size, that is, larger schools had a greater probability to be selected (schools with an enrolment of >25 learners per grade were considered as large, those with <25 learners per grade were small). In Stage 2, classes from Grades 8 to 11 were selected using systematic equal probability sampling from each selected school. All learners in the selected classes were eligible to participate. Each participant was given an information packet to take home that included the background of the study, assent/consent forms, and referral information on violence treatment programs and substance abuse treatment. For those who were below the age of 18 years, parental consent was required along with the assent forms. The participants were told to bring their signed assent/consent forms to school the next day and the ones who agreed to participate were invited to complete a questionnaire in their classrooms.

Measures

Sociodemographics. We gathered information on participants' gender, age, ethnic group (Black, White, people of mixed heritage, people of Indian/Asian descent), dwelling type (formal vs. informal dwelling), area of living (urban, rural, peri-urban), and father/male guardian' and mother/female guardian's employment status.

Indirect home victimization. Indirect exposure to home violence was measured using two items adapted from the Survey of Children's Exposure to Violence (Richters & Saltzman, 1990): "How many times in your whole life have you seen people chased by someone who wanted to hurt them in your home?" and ". . . have you seen people beaten up by someone in your home?" The original items do not include context-related wording because the instrument was

designed to measure exposure to community violence. To measure indirect home victimization, we added “in your home” to these items. The responses were 1 (*never*), 2 (*once or twice*), 3 (*a few times*), and 4 (*many times*), and were averaged to form an index of indirect home victimization. Higher scores indicated higher frequency of indirect home victimization ($r = .40$).

Indirect school victimization. Similar to indirect home victimization, indirect school victimization was measured using the same two items as home victimization, except that the wordings were changed to “in your school.” Higher scores indicated higher frequency of indirect school victimization ($r = .47$).

Indirect community victimization. Indirect exposure to community violence was measured using 15 items adapted from the Survey of Children’s Exposure to Violence (Richters & Saltzman, 1990) to suit the South African context of violence and crime. These items assessed the frequency of an adolescent witnessing or hearing about different types of violence in the community in his or her lifetime. About 15 types of violence exposure in the community included witnessing or hearing about physical violence, threats, deaths, and interpersonal crime, for example, “How many times in your whole life have you seen people slap, hit, or punch someone?” and “. . . have you seen or heard about people killed by someone else?” Response options were 1 (*never*), 2 (*once or twice*), 3 (*a few times*), and 4 (*many times*). Items were averaged and higher scores indicated higher frequency of indirect community victimization ($\alpha = .90$).

Direct community victimization. Similar to indirect community victimization, the items measuring direct community victimization were adapted from the Survey of Children’s Exposure to Violence (Richters & Saltzman, 1990). A total of 15 items were used to measure 15 types of violence related to an adolescent’s direct experience of physical violence, threats, and interpersonal crime in the community in his or her lifetime, for example, “How many times in your whole life have you, yourself, actually been attacked or stabbed by someone with a knife, panga and/or kierrie?” and “. . . has someone threatened or tried to kill you?” Response options were 1 (*never*), 2 (*once or twice*), 3 (*a few times*), and 4 (*many times*). The scores were averaged and higher scores indicated higher frequency of direct community victimization ($\alpha = .84$).

Indirect political victimization. The indirect exposure to political violence scale was adapted from a previous study (Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001) to measure the experience of Apartheid. Adolescents were asked whether they heard of or know any of South Africa’s colonial and

historical events of Apartheid that happened to someone in their lives, such as a family, a friend, or an acquaintance. The scale has 28 items related to the political violence including forced removal and denied access of entry, participation in political uprising activities, experience of being imprisoned, and incidents of racial discrimination, for example, "Have any of your family/friends or anyone you know ever been removed from home and forced to move somewhere else because of race?" and ". . . ever experienced police brutality (beaten, harassed) because of race?" The response options were 1 (*yes*), 2 (*no*), and 3 (*I don't know*). The "yes" responses were summed to obtain an index of indirect exposure to political violence with higher scores representing more exposure in an adolescent's life (possible range = 0-28; $\alpha = .83$).

Polyvictimization. Polyvictimization was computed to indicate the additive count of one's violence exposure by summing the number of violence each adolescent has indirectly or directly experienced, after first recoding the items of all victimization variables into 1 (*exposure*) and 0 (*no exposure*). The indication of any frequency of a particular victimization item was coded as 1. Adolescents who reported "never" to the items measuring the different types of victimization were coded as 0 (possible range = 0-62; actual range = 0-61, $M = 41$, $SD = 7.51$).

Hopelessness. Feelings of hopelessness were measured using Beck's Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974). The scale consisted of five dichotomous items, 1 (*true*) or 0 (*false*), for example, "I might as well give up because I can't make things better for myself." and "I never get what I want, so it's dumb to want anything." The scale was summed and the higher score indicated higher level of hopelessness (possible range = 0 to -6; $\alpha = .75$). The normality tests showed the responses were positively skewed and approximately half of the participants reported being not hopeless. Therefore, this variable was further dichotomized into "0" for the participants who scored 0 for the summed score, and "1" for the ones who scored 1 or higher for the summed score (hopeless = 38%, not hopeless = 42%).

Anxiety. Anxiety symptoms were measured using the Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1985). The 28 items measured physiological symptoms, worry/oversensitivity, and concentration problems an adolescent had in difficult situations, for example, "I worry about what other people think of me." and "I get nervous when things do not go the right way." Adolescents were asked to respond with 1 (*yes*) or 0 (*no*). The "yes" responses were summed to compute the final score with higher scores indicating more feelings of anxiety (possible range = 0-28; $\alpha = .87$).

Depression. Depression symptoms were examined using a 10-item scale of the Center for Epidemiological Studies for Depression (Radloff, 1977). Respondents were asked to indicate how often they experienced certain thoughts/emotions during the past week on a 5-point scale—1 (*never*), 2 (*hardly ever*), 3 (*sometimes*), 4 (*quite often*), and 5 (*always*), for example, “I was bothered by things that usually don’t bother me.” and “I felt fearful.” Positively phrased items (e.g., “I felt hopeful about the future.”) were reverse coded before computing an average score across the items of the scale, so that higher scores mean more symptoms of depression ($\alpha = .80$).

Perceived stress. The degree to which the adolescents perceived their lives as stressful was measured using the 10-item Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983). Adolescents were asked to indicate how often during the past month they found their lives unpredictable, uncontrollable, and overloaded on a scale with responses of 1 (*never*), 2 (*hardly ever*), 3 (*sometimes*), 4 (*quite often*), and 5 (*always*), for example, “How often have you felt that things were going your way?” and “How often have you found that you could not cope with all the things that you had to do?” Positively worded items were recoded before computing an average score across the items of the scale, so that higher scores indicate more perceived stress ($\alpha = .84$).

Suicidal ideation. Suicidal ideation was measured by two items from the third National Youth Risk Behavior Survey in South Africa (Reddy et al., 2013). Adolescents were asked about their contemplation of taking some action to end their own lives in the past 6 months: “Did you ever seriously consider attempting suicide?” and “Did you make a plan about how you would attempt suicide?” The responses were binary, with 1 (*yes*) and 0 (*no*). The two items were summed to form an index of suicidal ideation ($r = .63$). The normality test showed the responses were positively skewed, with more than 60% of adolescents did not have any suicidal ideation. As such, the variable was dichotomized into “0” for the participants who scored 0 for the summed score, and “1” for the ones who scored 1 or higher for the summed score (have ideation = 22%, no ideation = 64%).

Data Analysis

The data were analyzed using SPSS (Version 23). For the analyses, we examined the levels of exposure to different types of violence and the intercorrelations between violence and the psychological correlates to understand the magnitude of violence exposure and the significance of the correlations between the variables. Independent sampled *t* tests were conducted to

investigate the gender differences in violence exposure and psychological functioning. We also examined the differential effects of violence across contexts on psychological functioning, by conducting regression analysis separately for each outcome variable. Multiple hierarchical regression was conducted for the outcome variables that are continuous (anxiety, depression, perceived stress), whereas binary logistic regression was conducted for outcome variables that are dichotomous (hopelessness, suicidal ideation). In Step 1 of the regression model, we entered only the sociodemographics that showed consistent associations—that is, more than one significant association with the predictor and outcome variables, namely, gender, people of mixed heritage, White, dwelling type, peri-urban, and father employment. In Step 2 of the regression model, victimization variables were entered. To examine the effects of polyvictimization and its quadratic function on psychological correlates, Step 1 of the regression model remained the same and polyvictimization and its quadratic function were entered in Step 2. The analyses were done separately by multiple hierarchical regression or logistic regression for each outcome variable. The quadratic function was calculated by first centering the polyvictimization variable to reduce multicollinearity then calculating the square of the centered variable.

In addition, as the regression analyses were conducted separately for the five outcome variables, we applied Bonferroni correction by using a lower criterion for significance ($\alpha = .01$) to minimize the potential for Type I error (Field, 2009).

Results

Table 1 shows the mean scores of the frequencies of exposure to violence in different contexts and polyvictimization. Within each context, the frequency of violence exposure among adolescents was low (i.e., below the scale midpoint), but polyvictimization was high (average 41 out of maximum 62). There were significant gender differences in violence exposure: Girls reported more indirect home victimization than boys, $t(1124) = -1.97, p < .05$; boys reported more indirect school victimization, $t(1133) = 2.51, p < .05$, and direct community victimization, $t(1101) = 2.18, p < .05$, than girls.

Weak-to-strong positive correlations were found among the five types of victimization (r s ranging from .07 to .53, p s < .01). The intercorrelations between different types of victimization and psychological symptoms showed a weak-to-moderate effect with r s ranging from .07 to .26 (p s < .05), suggesting that a higher frequency of a type of victimization exposure was associated with higher levels of adverse psychological functioning. Lack of associations were found for indirect school victimization, indirect

Table 1. Means (and Standard Deviations) of the Frequencies of Exposure to Different Types of Victimization in Adolescents.

Type of Exposure	Total		Boys		Girls		α/r
	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)	
Indirect home victimization	1,283	1.62 (0.74)	522	1.58 (0.72)	604	1.66 (0.76)	.40
Indirect school victimization	1,296	2.37 (0.90)	520	2.45 (0.92)	615	2.32 (0.87)	.47
Indirect community victimization	1,314	2.36 (0.67)	532	2.36 (0.69)	619	2.33 (0.64)	.90
Direct community victimization	1,315	1.43 (0.40)	533	1.45 (0.40)	618	1.40 (0.38)	.84
Indirect political victimization	1,310	4.54 (5.49)	531	4.56 (5.67)	617	4.31 (5.23)	.83
Polyvictimization	1,312	41.22 (7.51)	532	41.38 (8.17)	618	41.10 (6.85)	—

community victimization, and polyvictimization with hopelessness. Similarly, lack of associations were found for indirect community victimization with suicidal ideation, as well as indirect political victimization with depression and perceived stress ($ps > .05$).

Finally, gender was positively but weakly associated with all dependent variables except for hopelessness. Being a girl was associated with more psychological maladjustment than boys (rs ranging from .11 to .21, $p < .01$). Inspection of the differences between girls and boys indicated that girls reported more anxiety $t(1118) = -7.28, p < .001$, depression $t(1126) = -5.63, p < .001$, perceived stress $t(1071) = -4.04, p < .001$, and suicidal ideation, $\chi^2(1) = 15.91, p < .001$, than boys.

Differential Effects of Victimization on Psychological Functioning

The results of the hierarchical multiple regression showed that sociodemographic variables accounted for 9% of variance in anxiety, 6% of variance in depression, and 7% of variance in perceived stress. The five types of victimization accounted for an additional 7%, 6%, and 5% of variance for anxiety, depression, and perceived stress, respectively. In the final model, gender was a consistent predictor for anxiety, depression, and perceived stress ($Bs > .12, ps < .001$). Unique predictors for anxiety were direct community victimization ($B = .19, p < .001$) and indirect political victimization ($B = .19, p < .001$). Direct community victimization was a unique predictor for depression ($B = .16, p < .001$), and indirect community victimization was a unique predictor for perceived stress ($B = .12, p < .001$) (see Table 2).

Table 2. Hierarchical Regression Analyses of Sociodemographics and Violence Across Different Contexts on Psychological Functioning in Adolescents.

	Anxiety		Depression		Perceived Stress	
	B	ΔR ²	B	ΔR ²	B	ΔR ²
Step 1		.09***		.06***		.07***
Gender	.23***		.17***		.11***	
Mixed heritage	-.17***		.11**		.17***	
White	-.19***		.00		.06	
Dwelling	.02		.04		.10**	
Peri-urban	-.02		-.06		-.05	
Father employment	.02		.03		.04	
Step 2		.07***		.06***		.05***
Gender	.25***		.18***		.12***	
Mixed heritage	-.10*		.15***		.18***	
White	-.13**		.06		.10*	
Dwelling	.02		.02		.07*	
Peri-urban	-.01		-.07*		-.07*	
Father employment	.03		.05		.05	
Indirect home victimization	.03		.05		.03	
Indirect school victimization	-.01		.01		.07	
Indirect community victimization	-.01		.08		.12**	
Direct community victimization	.19***		.16***		.07	
Indirect political victimization	.16***		-.03		-.06	

*p < .05. **p < .01. ***p < .001.

The results of the binary logistic regression analyses showed that direct community victimization (odds ratio [OR] = 2.48, 99% confidence interval [CI] = [1.26, 4.89]) and indirect political victimization (OR = 1.05, 99% CI = [1.01, 1.10]) were associated with higher odds of hopelessness by 2.48 and 1.05 times, respectively. For suicidal ideation, there was an effect of gender, such that being a girl increased the odds by 2.12 times to have this symptom (OR = 2.12, 99% CI = [1.33, 3.39]). Direct community victimization (OR = 3.76, 99% CI = [1.82, 7.76]) was associated with higher odds of suicidal ideation by 3.76 times (see Table 3).

Cumulative Effects of Victimization on Psychological Functioning

Results from the hierarchical multiple regression analyses showed the sociodemographic variables in total accounted for 9% of variance in anxiety, 6% of variance in depression, and 8% of variance in perceived stress. Polyvictimization and its quadratic function accounted for an additional

Table 3. Binary Regression Analyses of Sociodemographics and Violence Across Different Contexts on Psychological Functioning in Adolescents.

	Hopelessness		Suicidal Ideation	
	OR	99% CI	OR	99% CI
Step 1				
Gender ^a	1.03	[0.70, 1.50]	1.91	[1.23, 2.97]
Mixed heritage ^{b,a}	0.41	[0.26, 0.66]	1.77	[1.01, 3.09]
White ^b	0.25	[0.12, 0.55]	1.05	[0.43, 2.58]
Dwelling	0.97	[0.54, 1.73]	1.03	[0.50, 2.11]
Peri-urban ^a	0.83	[0.51, 1.35]	0.39	[0.20, 0.75]
Father employment	0.86	[0.55, 1.34]	0.71	[0.43, 1.19]
Step 2				
Gender ^a	1.07	[0.72, 1.59]	2.12	[1.33, 3.39]
Mixed heritage ^{b,a}	0.50	[0.31, 0.82]	2.57	[1.40, 4.73]
White ^b	0.28	[0.13, 0.64]	1.61	[0.62, 4.19]
Dwelling	1.05	[0.57, 1.92]	0.96	[0.46, 2.00]
Peri-urban ^a	0.89	[0.54, 1.45]	0.38	[0.19, 0.74]
Father employment	0.86	[0.54, 1.36]	0.77	[0.45, 1.31]
Indirect home victimization	1.20	[0.90, 1.59]	1.18	[0.86, 1.62]
Indirect school victimization	0.89	[0.68, 1.16]	0.87	[0.64, 1.18]
Indirect community victimization	0.69	[0.46, 1.03]	0.95	[0.60, 1.52]
Direct community victimization ^{b,a}	2.48	[1.26, 4.89]	3.76	[1.82, 7.76]
Indirect political victimization ^b	1.05	[1.01, 1.10]	1.03	[0.99, 1.08]

Note. OR = odds ratio.

^asignificant variables for suicidal ideation.

^bsignificant variables for hopelessness.

1%, 4%, and 4% of variance in anxiety, depression, and perceived stress, respectively. In the final model, gender ($B_s > .23$, $ps < .001$) and polyvictimization ($B_s > .09$, $ps < .01$) were unique predictors for anxiety, depression, and perceived stress. The quadratic function of polyvictimization was not significantly associated with any psychological symptoms ($ps > .01$) (see Table 4).

The results of the binary logistic regression analyses showed that being a girl was associated with higher odds of suicidal ideation by 2.01 times (OR = 2.01, 99% CI = [1.29, 3.14]). Moreover, polyvictimization was associated with increased odds of suicidal ideation by 1.04 times (OR = 1.04, 99% CI = [1.01, 1.08]). For hopelessness, there were no significant associations with gender or polyvictimization ($ps > .01$) (see Table 5).

Table 4. Hierarchical Regression Analyses of Sociodemographics and Polyvictimization on Psychological Functioning in Adolescents.

	Anxiety		Depression		Perceived Stress	
	B	ΔR^2	B	ΔR^2	B	ΔR^2
Step 1		.09***		.06***		.08***
Gender	.23***		.18***		.12***	
Mixed heritage	-.17***		.12**		.19***	
White	-.19***		.00		.06	
Dwelling	.02		.04		.09*	
Peri-urban	-.03		-.07*		-.06	
Father employment	.02		.02		.03	
Step 2		.01*		.04***		.04***
Gender	.23***		.18***		.12***	
Mixed heritage	-.17***		.10*		.16***	
White	-.18***		.02		.07*	
Dwelling	.01		.02		.08*	
Peri-urban	-.04		-.08*		-.07*	
Father employment	.02		.03		.03	
Polyvictimization	.09**		.22***		.20***	
Polyvictimization squared	.07*		.05		.01	

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

Discussion

The purpose of the study was to examine the differential effects of violence across major contexts in South African adolescents' lives (home-, school-, community-, and political victimization) as well as the cumulative effects of violence across these contexts (polyvictimization) on adolescents' levels of hopelessness, anxiety, depression, perceived stress, and suicidal ideation, to provide refined recommendations for mental health interventions in South Africa. The results indicated that victimization experienced by adolescents in their distal environment, that is, violence exposure in the community, was associated with increased scores on measures of hopelessness, depression, anxiety, perceived stress, and suicidal ideation. Contrary to our prediction, this pattern was not found for victimization experienced in their proximal environment, such as home and school. Yet Mrug et al. (2008; Mrug & Windle, 2010) found that violence exposure at home and school are more robust predictors for anxiety and depression than exposure to community victimization. As they argued, adolescents are likely to know or be in a relationship with the perpetrators of

Table 5. Binary Regression Analyses of Sociodemographics and Polyvictimization on Psychological Functioning in Adolescents.

	Hopelessness		Suicidal Ideation	
	OR	99% CI	OR	99% CI
Step 1				
Gender ^a	1.01	[0.70, 1.47]	1.95	[1.26, 3.01]
Mixed heritage ^{b,a}	0.40	[0.25, 0.63]	1.78	[1.03, 3.06]
White ^b	0.24	[0.11, 0.51]	1.02	[0.42, 2.46]
Dwelling	0.94	[0.54, 1.67]	1.00	[0.50, 2.01]
Peri-urban ^a	0.82	[0.51, 1.31]	0.36	[0.19, 0.70]
Father employment	0.83	[0.53, 1.28]	0.71	[0.43, 1.17]
Step 2				
Gender ^a	1.03	[0.71, 1.49]	2.01	[1.29, 3.14]
Mixed heritage ^{b,a}	0.41	[0.26, 0.65]	1.72	[0.99, 2.99]
White ^b	0.24	[0.11, 0.52]	1.12	[0.46, 2.74]
Dwelling	0.96	[0.54, 1.70]	0.97	[0.48, 1.95]
Peri-urban ^a	0.82	[0.51, 1.32]	0.35	[0.18, 0.68]
Father employment	0.83	[0.54, 1.29]	0.74	[0.44, 1.22]
Polyvictimization ^a	1.00	[0.97, 1.03]	1.04	[1.01, 1.08]
Polyvictimization squared	1.00	[1.00, 1.00]	1.00	[1.00, 1.00]

Note. OR = odds ratio.

^asignificant variables for suicidal ideation.

^bsignificant variables for hopelessness.

violence in home or school contexts and have limited control over their presence in these contexts, that is, the closer one's social and relational distance to violence perpetrators, the more adverse the psychological outcomes could be. Our findings, however, corroborate several studies conducted in South Africa that demonstrate community victimization as the most consistent predictor for maladaptive psychological outcomes (e.g., Barbarin, Richter, & de Wet, 2001; Kaminer et al., 2013). This consistent association may be related to the environmental context in South Africa. South Africa is unique in the sense that the prevalence of violence in the general public is high, which supports our finding on the association between psychological functioning and community victimization, and also sheds light on a possible cross-cultural variation in violence exposure and its associated psychological consequences due to contextual differences. Adolescents living in violent communities may feel continually at risk of victimization by acts that are unforeseeable (e.g., robberies, gang activities, shooting) and not under their control, and as a result may experience a sense of fear for their own safety and the safety of the people around them. This

may lead to chronic emotional hyperarousal, which is associated with adverse mental health consequences (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009).

We found that adolescents who had exposure to political victimization—hearing about Apartheid-related victimization of others—reported anxiety and feelings of hopelessness, suggesting that Apartheid continues to have a negative psychological impact on the younger South African generations. The transmission of trauma to future generations, or intergenerational trauma, has been documented in the context of ethnopolitical violence and has implications for psychological adjustment in youth (Bombay, Matheson, & Anisman, 2009; Kahane-Nissenbaum, 2011). Mechanisms by which the indirect exposure to political violence of Apartheid affect the psychological functioning of South African adolescents require further exploration as the current data prohibit drawing firm conclusions. Song, Tol, and de Jong (2014) found parents/caregivers exposed to political victimization can negatively influence the psychological functioning of their children as a result of their own mental distress, maladaptive behaviors, and poor parenting skills.

Our bivariate correlation analyses showed all types of victimization were positively intercorrelated, indicating an overlap in the experience of victimization. Indeed, victimization is rarely a one-off event, but a condition of ongoing danger across multiple life domains that adolescents experience (Finkelhor et al., 2007; Kaminer et al., 2013), that is, polyvictimization. Several studies in South Africa (Kaminer et al., 2013; Leoschut & Kafaar, 2017) found polyvictimization is a common experience for adolescents. In line with our prediction and other studies (Finkelhor et al., 2007; Latsch et al., 2017; Mrug et al., 2008; Soler et al., 2012), our results showed a cumulative impact of violence, and that the levels of anxiety, depression, perceived stress, and suicidal ideation in adolescents were higher as victimization experiences increased. The adverse psychological effects of polyvictimization may be due to the context of multiple and continuous violence exposure across major domains in an adolescent's life that interferes with adaptive coping (Finkelhor et al., 2007). Polyvictimization across multiple contexts results in relatively few areas where one can feel safe, and may undermine healthy development and elicit feelings of insecurity, posing a unique set of psychological challenges for adolescents (Mrug et al., 2008).

Moreover, polyvictimization may have more deleterious psychological effects than other forms of (singular) violence exposure (Latsch et al., 2017). Finkelhor et al. (2007) showed polyvictimization had higher predictive power on anxiety and depression symptoms in children than physical assault or sexual assault alone. In addition, they found polyvictimization was a stronger predictor for anxiety than exposure to a single type of victimization and

repeated victimization of the same type (chronic victimization). Similarly, Gustafsson et al. (2009) found an additive count of multiple traumatic events (e.g., car accident, victim of robbery, witness to someone getting hurt) to be a consistent and more significant predictor for trauma symptoms in children and adolescents than any single traumatic event. Thus, in line with these studies, the current research adds to the literature by demonstrating the cumulative and interactive effects among different types of victimization, and its damaging and potentially less reversible psychological effects of polyvictimization on young people. Interestingly, in contrast to what we expected, there were no curvilinear relationships between violence exposure and psychological symptoms. In the current sample, there is a linear relationship between polyvictimization and psychological symptoms—each additional victimization increases the likelihood of maladjustment for these adolescents, which in the context of South Africa is cause for concern. Future studies may help the understanding of curvilinear relationships between violence and psychological functioning, as some researchers have demonstrated such a relationship (e.g., Morales & Guerra, 2006; Mrug et al., 2008). These curvilinear effects are possibly linked to a function of adolescents' psychological desensitization, or coping and resilience in the face of cumulative risks and adversities (Fergus & Zimmerman, 2005; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Mrug et al., 2008).

Of the sociodemographic variables we investigated, only gender showed a consistent association with most psychological symptoms. Girls were more likely than boys to experience depression, anxiety, perceived stress, and suicidal ideation. Globally, more than one third of women (35%) are victims of physical or sexual violence and are prone to mental problems (Garcia-Moreno et al., 2013). The high magnitude of violence toward women is also evident in South Africa. In a recent Demographic and Health Survey, 21% of women had ever experienced physical violence by a partner, and 6% had ever experienced sexual violence by a partner (Statistics South Africa, 2016). The rate of murder of women by intimate partners in South Africa is 6 times the global average (Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009). These data demonstrate that being female in South Africa is subjected to high levels of violence, which poses a significant risk of psychological problems in women of all ages. Furthermore, our results showed that boys and girls confronted different types of violence. Specifically, girls reported more indirect home victimization than boys, and boys reported more indirect community and school victimization than girls. However, the effect of gender on psychological functioning in our study was not influenced by any of these victimization types, as no significant interactions between gender and violence were found. This means that being a girl entails a higher risk of experiencing adverse

psychological functioning, irrespective of the levels of these types of exposure to violence. The lack of gender by violence moderation effects on psychological symptoms has also been noted in another South African study (Kaminer et al., 2013).

Limitations and Directions for Future Research

Although this study delineated the differential and cumulative effects of violence victimization on psychological functioning in a representative sample of adolescents in the Western Cape Province, several limitations should be noted. First, the cross-sectional design and self-reported data prevent drawing causal conclusions. Longitudinal research would be useful to understand the causal links of violence and its associated psychological correlates in adolescents. It may also be advantageous for future research to control for factors related to psychological functioning in adolescents, such as nonvictimization traumas (e.g., illnesses, accidents, natural disasters) and chronic adversities (e.g., substance abuse by family members, repeating school; Finkelhor et al., 2007). Moreover, factors that may exacerbate or alleviate the relationship between victimization and psychological functioning of adolescents, such as coping skills (e.g., Horwitz, Hill, & King, 2011), emotion regulation (e.g., Flouri & Mavroveli, 2013), self-esteem (e.g., Turner, Shattuck, Finkelhor, & Hamby, 2017), social support (e.g., Leshem, Haj-Yahia, & Guterman, 2016), and caregiver factors (e.g., Guttman-Steinmetz, Shoshani, Farhan, Aliman, & Hirschberger, 2012) can be taken along in future studies to gain a holistic view of the mechanism of violence.

In addition, the victimization measures used in the current research may have been suboptimal. We used an additive count for polyvictimization, thus data on the intensity and frequency of exposure to each type of victimization are lost—although this approach is deemed appropriate in an exploratory stage of work on multivictimization measurement (Finkelhor et al., 2007). Furthermore, the limited number of items for home and school victimization might have lowered the reliability of these variables due to the fact that only two victimization constructs, that is, “beaten” and “chased,” were measured. This may have attenuated the real-life impact of home and school victimization in South African adolescents, because other types of victimization such as peer or sibling assault, physical or emotional bullying, neglect, verbal sexual harassment can also occur at home and school (Finkelhor et al., 2007).

Finally, community victimization was differentiated into indirect and direct exposure, whereas the victimization variables in other contexts were not. This differentiation seems relevant, as several South African studies have shown differential psychological effects of indirect and direct victimization across

multiple contexts, in which indirect community victimization is consistently related to adjustment problems in youth compared with indirect or direct exposure in other contexts (e.g., Barbarin, Richter, & de Wet, 2001; Shields, Nadasen, & Pierce, 2009). Future research may consider examining both indirect and direct victimization across important contexts in adolescents' lives to enhance the understanding of the effects of different types of victimization and provide more refined recommendations to alleviate these effects.

Clinical and Policy Implications

The results of the study suggest the need for gender-specific mental health interventions to promote healthy psychological functioning for girls, as we found them vulnerable to psychological problems. For example, a gender-responsive program that involves a sensitive approach with an understanding to the realities of women's lives is able to provide a safe, trusting, and supportive environment to reduce their mental health symptoms and substance use (Covington, Burke, Keaton, & Norcott, 2008). Moreover, our finding on the main effect of community victimization on adolescent psychological functioning stresses the importance of the integration of various service providers in the community such as the South African Police Service, local nongovernmental organizations, and local municipal authorities to create a safe environment and actively respond to the needs of adolescents exposed to violence in the community. For example, a social development center with collective efforts on the part of a multidisciplinary team (e.g., community leaders, social workers, psychologists) may help improve victims' access to mental health care resources (Schmidt, 2014). Indeed, previous research has established that a caring and cohesive community protects youth victims against an increase in vulnerability for psychological distress over time (Jain, Buka, Subramanian, & Molnar, 2012). In addition, there is also a need to incorporate an understanding of intergenerational transmission of trauma in mainstream interventions to foster healing in the South African younger generations who may be adversely affected by knowing about others' victimization experiences of the political violence of Apartheid (Roy, Noormohamed, Henderson, & Thurston, 2015).

Furthermore, our study revealed violence exposure in one ecological context to be positively associated with exposure in other contexts, and exposure to polyvictimization yielded significant psychological problems in adolescents. We recommend practitioners and policy makers in South Africa implement multifaceted and multipurpose mental health programs that involve active identification and referral, health education, support, counseling, and follow up, as well as to consider the full spectrum of sources of violence across major contexts of an adolescent's life to gain a comprehensive profile

of their victimization experience. A school-based intervention may be useful as adolescents spend significant amount of time in school, thus making school a key platform to provide support for healthy functioning. A study found that a socioeconomically disadvantaged sample of children who had exposure to violence had lower scores in symptoms of trauma and depression than the wait-list group, 3 months after attending a school-based cognitive behavioral group therapy (Stein et al., 2003). The therapy consisted of 10 sessions aimed at combating negative thoughts and enhancing skills in adaptive coping and problem solving in these children (Stein et al., 2003). Moreover, a school–family program where school personnel provide parenting education to facilitate parental support to victimized youth may extend the impact across multiple contexts to build adaptive emotional and behavioral coping skills in adolescents (Brubaker, Brubaker, & Link, 2001; Kliwer et al., 2004), both as a means to prevent adverse psychological symptoms and to strengthen the resilience to violence.

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Notes

1. A former system of institutionalized racial segregation in South Africa (1948–1994) in which the access to economic resources, medical care, and educational and employment opportunity were restricted for people socially classified as “non-white.”
2. Formal dwelling type refers to a brick house or an apartment/flat; informal dwelling type refers to a shack, hut, house made of mud and stick, or house made of mud bricks and thatch.

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