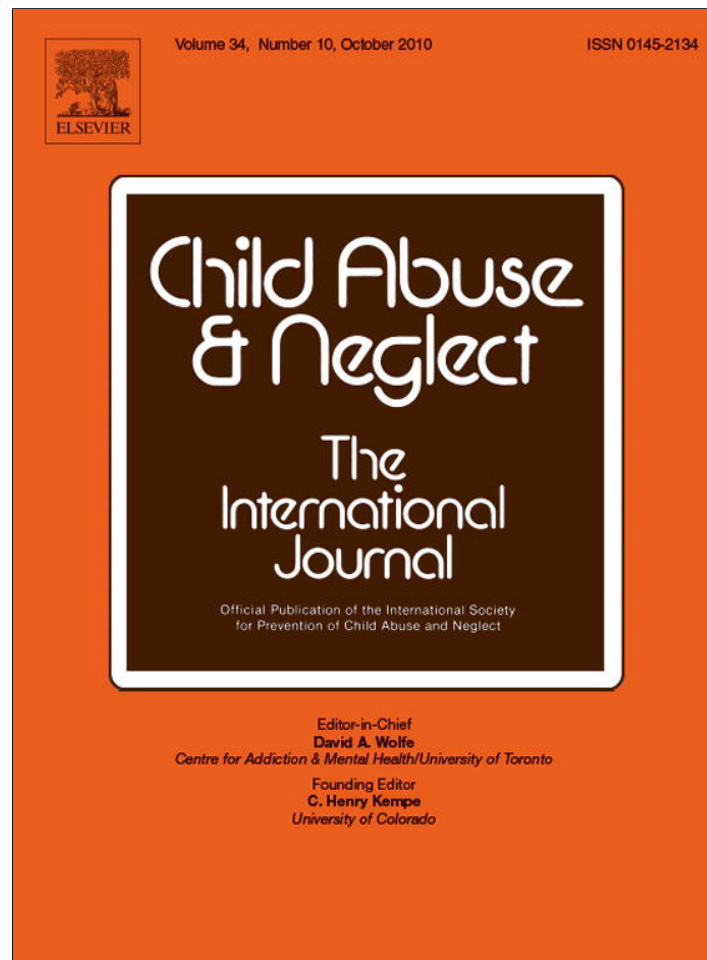


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Risk and protective factors for bullying victimization among AIDS-affected and vulnerable children in South Africa[☆]

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ABSTRACT

Objectives: To examine whether bullying is a risk factor for psychological distress among children in poor, urban South Africa. To determine risk and protective factors for bullying victimization.

Method: One thousand and fifty children were interviewed in deprived neighborhoods, including orphans, AIDS-affected children, streetchildren, and child-headed households. Using standardized scales, children reported on bullying victimization, psychological problems, and potential risk and protective factors at individual, peer, family, and community levels.

Results: 34% of children reported bullying victimization. Bullied children showed higher levels of anxiety, depression, suicidal ideation, and post-traumatic stress, as well as higher levels of clinical-level disorder. Risk factors for being bullied were being a victim of physical or sexual abuse or domestic violence at home, living in a high-violence community, and experiencing AIDS-related stigma (independent of sociodemographic cofactors and child psychological disorder). Protective factors were sibling support and support from friends, although findings suggest that friendship groups may also be sources of bullying for AIDS-affected children.

Conclusions: Bullying is an independent and important risk factor in child psychological distress in South Africa. Children victimized at home or in the community are more likely to be bullied, suggesting a cycle of violence.

Practice implications: Those working with children in Southern Africa should be alert to risk of bullying, especially among abused or AIDS-affected children. Interventions combating community violence and AIDS-related stigma may have additional positive impacts on bullying, and promotion of peer and sibling support may reduce bullying victimization among high-risk children.

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Introduction

Bullying is defined as intentional, repeated acts of aggressive behavior intended to cause harm. It is characterized by an imbalance in power between the perpetrator and the victim (Olweus & Hart, 1993; Rigby, 2002). Studies in high income countries have established adverse psychological sequelae of bullying victimization, including depres-

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sion, anxiety (Arseneault et al., 2006; Nansel, Craig, Overpeck, Saluja, & Ruan, 2004), and post-traumatic stress (Tehrani, 2004).

Psychological disorders do put children at higher risk of being bullied. However, there is also clear evidence that bullying victimization leads to new and further psychological problems over and above children's pre-existing distress (Arseneault et al., 2006, 2008). This suggests the importance of identifying which groups of children are most at risk of bullying victimization, in order to inform interventions and sensitize professionals working with children. It is further important to identify "protective factors" that modify the impact of risk factors for bullying and reduce the likelihood of children from high-risk groups becoming bullied. Literature from high income countries has found several risk factors for bullying victimization including child maltreatment (Bowes et al., 2009; Shields & Cicchetti, 2001), parental conflict (Baldry, 2003), low socio-economic status (Wolke, Woods, Stanford, & Schulz, 2001), and living in disadvantaged communities (National Center for Education Statistics, 2002). Protective factors for bullying victimization include having highly supportive parents and support from friends (Baldry & Farrington, 2005; Wang, Iannotti, & Nansel, 2009).

Children in sub-Saharan Africa face multiple risks to development. In South Africa, these include high levels of abuse (Dawes & Mushwana, 2007), poverty (Noble, Wright, & Cluver, 2006), an HIV/AIDS epidemic affecting almost a third of the population (Department of Health, 2008), and lasting effects of the apartheid legacy, including interpersonal and community violence (Burton, 2008). In light of these many challenges facing children, it is perhaps unsurprising that research on links between childhood bullying and psychological disorders is limited. However, notable recent studies in sub-Saharan Africa have identified that bullying victimization is associated with other risks to child development: In South Africa, being bullied was associated with violence, fighting and antisocial behavior (Liang, Flisher, & Lombard, 2007), and school truancy or dropout (Siziya, Muula, & Rudatsikira, 2007). Studies also show consistently high levels of bullying, ranging from 15% (Dussich & Maekoya, 2007) to 38% (Richter, Palmay, & de Wet, 2000). A recent review of evidence from 8 African countries found adolescent victims of bullying to experience more general feelings of loneliness, sleep problems, suicidal thoughts, substance use, and reported multiple sex partners (Brown, Riley, Butchart, & Kann, 2008), but highlights the lack of research examining psychological problems and childhood bullying.

Very little is known about the risk factors for being bullied in sub-Saharan Africa. In poor areas, many children already belong to groups known to be at high risk for psychological distress and reduced life chances. For example, streetchildren are vulnerable to HIV infection (Swart-Kruger & Richter, 1997), AIDS-orphaned children to psychological and physical health problems (Cluver, Gardner, & Operario, 2008; Nyamukapa et al., 2008), and children living in child/youth-headed households to isolation and educational deficits (Thurman et al., 2006). Levels of child abuse in South Africa are extremely high, and many children live in urban communities characterized by violent crime. One quantitative study in Zimbabwe examined links between AIDS-orphanhood and bullying victimization, and found AIDS-orphaned children to report more bullying (Nemapare & Tang, 2003). Qualitative and anecdotal evidence in South Africa suggests that children in AIDS-affected families experience distress as a result of bullying (McGaw & Wameyo, 2005; Strode & Barrett Grant, 2001). However, there is a clear need for evidence to identify which—if any—of these groups are at higher risk of bullying victimization. No known studies examine risk and protective factors which reduce or mitigate the likelihood of being bullied in sub-Saharan Africa.

This study had three aims. First, to examine whether bullying victimization among a group of children already living in situations of extreme hardship was associated with internalizing psychological problems including depression, anxiety, and post-traumatic stress. Second, to examine risk factors for victimization at three levels: i) general risks for children in poor urban neighborhoods (abuse, domestic violence, community violence and food insecurity); ii) risks related to caregiving arrangements (orphanhood, living on the streets, living in a child-headed household and multiple changes of primary caregiver); and iii), specific risks related to familial HIV-infection (AIDS-orphanhood, AIDS-related stigma, caregiver's chronic illness). Third, the paper aimed to examine potential protective factors which may exist within different spheres of a child's life (Bronfenbrenner, 1979). These were family (perceived warmth at home and sibling support), friends (perceived peer support), school (perceived support from teachers and principals), and community (regular attendance at sport, music or dance groups). We are thus attempting to address three overarching questions: is bullying a risk for psychological disorders?, Who are most at risk?, and what risk and protective factors can be identified, in order to provide clues as to which interventions may be most likely to help.

Method

Procedures

The study included 1,050 children aged 10–19 (51% female), in 20 high-poverty Xhosa-speaking urban neighborhoods of Cape Town; areas formerly designated for Black Africans under apartheid. These areas are characterized by high levels of community and interpersonal violence, poverty, HIV prevalence of 23–30%, and AIDS-related stigma. Children and adolescents were interviewed in 2006, recruited from 9 schools, 18 community organizations (including 6 shelters and 2 feeding schemes for streetchildren, community sports schemes, and child feeding schemes), and door-to-door sampling. By these means access was gained to highly vulnerable children who might have been excluded by solely school or door-to-door sampling.

Although the generalizability of the present study is limited because of the non-probabilistic sample, its representativeness (Galtung, 1973) was improved compared to school-based surveys by the additional purposive sampling of often-excluded populations: streetchildren ($n = 60$), child-headed and youth-headed households ($n = 49$), and AIDS-orphaned children ($n = 425$). It is noted that there is no reliable data on numbers or proportions of the first 2 of these groups within the child population. It was therefore impossible to determine whether we had appropriate proportions within our sample. We were able to weight the sample according to proportions of AIDS-orphaned and other-orphaned in the child population, but were not able to weight by streetchildren or child-and-youth-headed households due to lack of population-level data.

Ethical protocols were approved by Oxford University, the University of Cape Town, and the Western Cape Education Department. Participation was voluntary, and in order to ensure informed consent in low-literacy areas, information and consent sheets were read aloud to children and caregivers. Thirty-four children did not participate due to recent bereavement (27), disclosure of HIV+ status (5), or lack of consent (2). With interviewers, children completed anonymous self-report questionnaires lasting 60 minutes. Extent of interviewer assistance was adjusted according to level of child literacy. All interviewers were local, Xhosa-speaking social workers, psychologists, or community health workers, recruited for their warmth and empathy, and trained in working with AIDS-affected children. Participants received refreshments and certificates, and organizations received staff training in child protection and mental health.

Confidentiality was maintained, except where children were at risk of significant harm or requested assistance.

Measures

Bullying victimization was measured with the 9-item, standardized Social and Health Assessment Peer Victimization Scale (Ruchkin, Schwab-Stone, & Vermeiren, 2004) used in research with vulnerable children in Cape Town (Ward, Martin, Theron, & Distiller, 2007). This scale is adapted from the Multidimensional Peer Victimization Scale, and showed $\alpha = .82$ in a US validation study (Mynard & Joseph, 2000). Items included; being called names, being hit or threatened, and having possessions broken, and were scored according to frequency in the past year.

Psychological distress comprised three separate measures each using standardized scales. *Depression* was measured using the short form of the Child Depression Inventory (Kovacs, 1992). This 10-item scale has been widely used in South Africa (e.g., Wild, Flisher, Laas, & Robertson, 2006, July) shows good psychometric properties, and has comparable results with the full CDI (Kovacs, 1992). *Anxiety* was measured using the Children's Manifest Anxiety Scale-Revised (R-CMAS, Reynolds & Richmond, 1978), a 28-item scale with good psychometric properties (Gerard & Reynolds, 1999) and prior use in Xhosa-speaking populations in South Africa. *PTSD* was measured using the Child PTSD Checklist (Amaya-Jackson et al., 2000). This has 28 items, measures symptomatology in the 4 DSM-IV subscales of avoidance, numbing, hyperarousal, and recurrent thoughts, and has been used extensively in South Africa (Seedat, Nyamai, Njenga, Vythilingum, & Stein, 2004). Psychometric properties show high reliability and validity when compared to diagnostic, clinician-administered K-SADS. The text-based checklist was accompanied by cartoons derived from the Levonn scale (Richters, Martinez, & Valla, 1990), which was adapted for Xhosa-speaking adolescents in Cape Town (Ensink & Robertson, 1999). Questionnaires were back-translated and piloted for acceptability.

Potential demographic covariates of age, gender, and socio-economic status (SES) were measured using items from the South African Census (Statistics SA, 2001). Unreliability of income reporting means that a summed census index of household goods was used as a proxy for SES. These included electricity, washing facilities, piped water, refrigerator, radio, TV, and telephone.

Presence or absence of a clinical-level internalizing disorder was also used as a covariate in analyses to determine whether risk and protective factors influenced children's likelihood of being bullied over and above the effects of any internalizing disorders the children may have. A clinical-level internalizing disorder was coded when children reported experiencing clinical-level scores for one or more of depression, anxiety, and post-traumatic stress. It is important to note that no clinical cut-offs have been validated in South Africa (or in Africa), and thus cut-offs standardized on developed world populations are used with caution.

Potential risk factors (general risk factors). Abuse and domestic violence: Participants reported on physical abuse, sexual abuse and domestic violence using 7 items from the Child Exposure to Community Violence checklist (Richters & Martinez, 1993), adapted after consultation with local social workers and pre-piloting (i.e., how many times in the past week were adults hitting each other in your home?). In the context of high levels of corporal punishment, physical abuse was defined conservatively as being hit with an object likely to cause "actual or potential physical harm" (World Health Organization, 1999), such as a broomstick, switch, stick, or metal piping. *Abuse at home* is the summed score of physical and sexual abuse

Exposure to community violence was measured using further items from the Child Exposure to Community Violence Checklist (Richters & Martinez, 1993). This scale has been used previously with Xhosa-speaking children in Cape Town (Heath & Kaminer, 2004), and was adapted to reflect common types of violence in South African townships. This was further modified after pre-piloting, in order to detect variance (for example, items in the CECV such as 'I have heard shooting in my neighborhood' had a 100% positive response rate in Cape Flats samples). In order to allow for already-extreme levels of community violence in the study area, we conservatively assessed violence exposure as witnessing of or victimization by the province's four most common community crimes: robbery, assault, stabbings, and shootings (South African Police Services, 2004). Children also identified any other witnessed or experienced traumas, such as rape.

Food insecurity was measured using self-report of 0–7 days without food in the past week, following studies in Tanzania (Makame, Ani, & McGregor, 2002) and Mozambique (Manuel, 2002). Reported lack of food 3 or more days was coded as food insecure. This conservative measure aimed to identify extreme and visible poverty within the already high-poverty study sites.

Potential risk factors (caregiving arrangements) orphanhood. The study used the UN definition of orphanhood as loss of one or both parents (UNAIDS, 2004). Children were identified as orphaned by teachers or NGO staff, but was confirmed by child self-report in a road of life activity developed from a social work assessment tool. In a further picture exercise, children drew or wrote messages or prayers for deceased family members. In recognition of the need for great sensitivity, all these measures were devised in consultation with local bereavement social workers.

Living in a child-headed or youth-headed household, or living on the streets Child-headed and youth-headed households were defined according to the South African National Action Plan for Orphans and other children made vulnerable by AIDS (Department of Social Development, 2009). Where there were no guardian adults and the oldest child was under 18, households were coded as 'Child-Headed.' Where the oldest caregiver was a sibling aged 18–25, households were 'Youth-Headed.' Streetchildren were identified as those sleeping 5 or more nights per week on the streets, or in a shelter for streetchildren.

Disrupted caregiving: Children reported number of experienced caregiver changes in their lifetime, deaths of primary caregivers, or moving to a new caregiver's home. This measure was coded dichotomously (2+ caregiver changes vs. others) in order to distinguish children who had experienced multiple caregiver deaths or breakdown of at least 1 fostering arrangement

Potential risk factors (AIDS and illness related risk factors) cause of parental death. Death certificates are unreliable sources regarding HIV/AIDS in South Africa, and clinical data is rarely available. Cause of parental death was determined using the 16-item verbal autopsy method, validated in previous studies in South Africa (Hosegood, Vanneste, & Timaeus, 2004), as well as in other African countries. In a South African validation study, sensitivity was found to be 89%, specificity 93%, and positive predictive value 76% (Kahn, Tollman, Garenne, & Gear, 2002). Determination of AIDS-related death required identification of 3 or more AIDS-defining illnesses (i.e., Kaposi's sarcoma, HIV-wasting syndrome, oral candidiasis). Where diagnoses were in doubt, symptoms were reviewed by 2 independent medical practitioners. For 81 children, cause of orphanhood could not be confirmed (e.g., death by tuberculosis with no other symptoms), and these were excluded from analyses which included orphanhood cause

AIDS-related stigma: Studies of AIDS-related stigma in South Africa show stigmatizing attitudes and actions towards HIV+ people, often based on moralistic assumptions about modes of infection, and fears of transmission through touching or proximity (Deacon, 2006). However, no standardized instruments currently exist to measure AIDS-related stigma among children and families of HIV-infected individuals. A brief 4-item stigma scale was devised, based on items from the Berger Stigma Scale for HIV+ Youth-Revised (Wright, Naar-King, Lam, Templin, & Frey, 2007). This was adapted using a) reports from qualitative interviews (Cluver & Gardner, 2007), b) literature review and c) consultation with local academics currently researching stigma (Deacon, 2006; Maughan Brown, 2006), and pre-piloted to ensure relevance for non-infected South African children. Participants reported frequency of experiencing teasing, being treated badly, and being gossiped about because of the illness of a family member (never/sometimes/very often). Scale reliability was good, with α .83 for stigmatizing events, and α .88 when including extent of distress. 'Stigma' was defined as endorsement of one or more experience of stigma. In high-prevalence study areas, many children had HIV-infected family, and thus AIDS-related stigma was increased among, but not restricted to, AIDS-orphaned children.

Caregiver ill-health: Participants reported perceived health status of primary caregivers as never/rarely/sometimes/frequently unwell, subsequently coded dichotomously as 'frequently unwell' versus others. This categorization was driven by theoretical considerations (i.e., evidence of chronic and frequent parental illness as particularly distressing to children) and local epidemiology (i.e., study areas show high levels of illness generally, and we wished to compare this extreme category with others)

Putative protective factors: warmth at home. Four variables were used to measure warmth at home. Positive reinforcement was measured by child-reported frequency of praise from primary caregivers, and coded as high (*often*) and low (*rarely/never*). Caregiver-child activities were measured by past-month help with homework, reading, or story-telling, and coded as 1+/none. Children reported self-perceived belonging in the household, coded as yes/somewhat/not at all. Intra-household allocation of food, clothes, and school fees, compared to other co-resident children was coded as positive (*I get more/I get about the same*) or negative (*I get less*).

Social support was measured in three spheres: *friend support*, *school support*, and *sibling support*. All were assessed using the standardized Social Support Scale (Adolescent Pathways Project, 1992), measuring different types of social support for urban adolescents in each microsystem of family, close friends and school, and used previously in Cape Town (Van der Merwe & Dawes, 2000; Ward, 2005). Cronbach's α coefficients were .85 for the sibling subscale, .67 for the teacher subscale, .72 for the school principal subscale, and .76 for friends subscale. Community-level potential protective factors were identified in qualitative research as participation in organized sport, dance or music group, and children were asked about those which they attended regularly. Except where indicated, all variables measured experiences during the previous 6 months.

Table 1
Risk factors for bullying victimization.

Risk factors	Unadjusted (a) β (95% CIs)	Adjusted for covariates ^b (b) β (95% CIs)	Adjusted for all other significant risk factors (c) β (95% CIs)
General risk factors			
Abuse at home	1.59 (1.27–1.91)**	1.34 (1.05–1.64)**	1.15 (.85–1.44)**
Domestic violence	1.35 (1.03–1.67)**	.73 (.41–1.05)**	.44 (.13–.75)**
Community violence	1.49 (1.17–1.81)**	1.03 (.72–1.35)**	.58 (.27–.90)**
Food insecurity	.80 (.47–1.13)**	–.01 (–.34 to .31)	–
Orphanhood-related risk factors			
Orphaned vs. non-orphaned	–.31 (–.65 to .02)	–	–
Orphaned by AIDS vs. orphaned by other causes	–.15 (–.82 to .51)	–	–
Living on the streets	.90 (.57–1.22)**	.60 (.29–.92)**	.27 (–.04 to .58)
Child-headed household	.00 (–.34 to .34)	–	–
Disrupted caregiving	–.06 (–.39 to .27)	–	–
AIDS-related risk factors			
AIDS-related stigma	1.61 (1.30–1.93)**	.82 (.49–1.16)**	.68 (.36–1.00)**
Caregiver ill-health	.41 (.08–.74)*	.13 (–.18 to .45)	–

^b Any clinical-level internalizing disorder, age, gender and SES.

** $p < .001$.

Statistical analyses

Our recruitment strategy had utilized over-sampling of AIDS-orphaned and other-orphaned children. In outline, we weighted the dataset to match the relative proportions of these groups occurring within the South African population—for which relevant estimates were available—towards obtaining a more representative sample. We then had to assume that the weighted sample would be broadly representative of Xhosa-speaking urban children across other risk factors. More specifically, there are no national or provincial datasets which directly measure numbers of AIDS-orphaned, other-orphaned, and non-orphaned children within the child population. We therefore used data from the General Household Survey, a bi-annual nationally representative survey conducted in the same year as data collection for this study (Statistics SA, 2006) to determine that 24% of all children within the 10–19 age group are orphaned (by any cause) within the general population. In order to identify proportions whose parents had died of AIDS, we used UNAIDS models (UNAIDS, 2006) estimating 50% of all orphaned children were AIDS-orphaned (detailed description of methodology used to produce UNAIDS estimates can be found at <http://www.epidem.org>). On the basis of these estimates, we weighted the dataset from the present sample.

We examined associations between bullying victimization and psychological problems (anxiety, depression, PTSD, behavior, and conduct problems) using bivariate correlations. We used descriptive analyses of frequencies to determine the proportion of bullying occurring in school or in the community. In order to examine associations of potential risk and protective factors with bullying victimization, analyses followed four steps. First we examined associations between each risk or putative protective factor and bullying victimization using univariate linear regression models (Tables 1 and 2, column a). Second, we examined whether associations remained significant after including children's age, gender, SES, and the presence of a clinical-level internalizing disorder as covariates to the previous regression models (Tables 1 and 2, column b). Third, we included all risk and putative protective factors found to be significant in step 2 into two separate multiple regression models to determine which factors exerted an independent effect on bullying victimization (Tables 1 and 2, column c). Fourth, as true 'protective factors' are defined by an interactive process in which exposure to the protective factor modifies the effects of the risk factor on the outcome (Rutter, 1999), we tested the potential moderating effect of each putative protective factor on the association between each risk factor and bullying victimization. Stepwise hierarchical regression models were examined with each significant risk and protective factor from the previous multiple regression analyses, as

Table 2
Protective factors for bullying victimization.

Protective factors	Unadjusted β (95% CIs) (a)	Adjusted for covariates ^b β (95% CIs) (b)	Adjusted for all other significant risk factors β (95% CIs) (c)
General protective factors			
Attending a sport, music or dance group	–.29 (–.62 to .05)	–	–
Warmth at home	–.60 (–.93 to –.27)**	–.17 (–.50 to .15)	–
Friend support	–.84 (–1.17 to –.51)**	–.48 (–.79 to –.17)*	–.40 (–.71 to –.08)**
Sibling support	–.94 (–1.27 to –.61)**	–.55 (–.84 to –.23)**	–.41 (–.72 to –.09)**
School support	.22 (–.12 to .55)	–	–

^b Any clinical-level internalizing disorder, age, gender and SES.

* $p < .01$.

** $p < .001$.

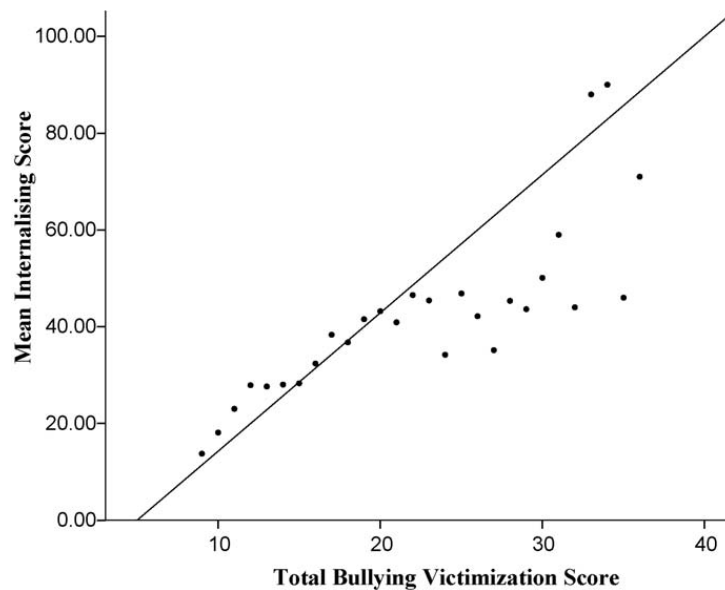


Fig. 1. Psychological problems and bullying victimization.

well as the two-way interactions between those factors as predictors and bullying victimization as the dependent variable. Statistical analyses were conducted using SPSS 15.0, and significance was set at $p < .01$ because of the number of comparisons made. Standardized regression coefficients are presented to allow comparison across risk and protective factors.

Results

Participants had a mean age of 13.4 years, with an age range 10–19 years, were 51% female, and ethnic origin was 97% Xhosa. Overall levels of bullying were high, with 34% of children reporting at least 4 out of 9 types of victimization in the past year (mean bullying score = 13.77, $SD = 5.28$). Of those who reported being bullied, 16% reported that the bullying occurred in school ($n = 123$), while 42% reported that the bullying occurred in their community. A large proportion reported that they were bullied both in school and in their community (42%, $n = 326$).

Bullying and mental health

Being bullied was significantly associated with a number of psychological problems among this group of children living in poor, urban South Africa. Regression analyses showed that being bullied was associated with an increased likelihood of symptoms of depression ($r = .29$, $p < .001$), anxiety ($r = .47$, $p < .001$), suicidal ideation ($r = .17$, $p < .001$), and post-traumatic stress ($r = .46$, $p < .001$). Bullying victimization was also significantly associated with 1 or more clinical-level internalizing disorders ($r = .38$, $p < .001$). These associations did not differ significantly by gender. Fig. 1 shows the relationship between total internalizing score and level of bullying victimization.

Risk factors for bullying

First we examined main effect relationships between all measured risk factors and bullying victimization. Table 1 shows associations between each risk factor and bullying victimization both for unadjusted analyses and for analyses controlling for the effects of covariates (gender, age, SES, and one or more clinical-level internalizing disorders). Risk factors positively associated with being a victim of bullying included living in a household with domestic violence, being the victim of physical or sexual abuse at home, living in a high-violence community, and food insecurity. Living on the streets and having a caregiver with chronic ill-health were also associated with an increased likelihood of being a victim of bullying. Disrupted caregiving—such as having had 2 or more changes of caregivers—and living in a child or youth-headed household were not significant risk factors for bullying victimization. AIDS-orphaned children were not at greater risk of bullying victimization relative to other-orphaned children, nor were orphaned children at greater risk than non-orphaned children. However, experience of AIDS-related stigma was associated with bullying victimization. When controlling for covariates, being the victim of physical or sexual abuse in the home remained significantly associated with bullying victimization ($\beta = 1.34$, $p < .001$), as well as living in a home with domestic violence ($\beta = .73$, $p < .001$), and living in a violent community ($\beta = 1.03$, $p < .001$). The association between food insecurity and bullying victimization was no longer significant when controlling for the effects of a clinical-level internalizing disorder. Children living on the streets were more likely to be bullied even after controlling for the effects of covariates ($\beta = .60$, $p < .001$), as were children who reported experiencing AIDS-related stigma ($\beta = .82$, $p < .001$). In multiple regression analyses including all risk factors found to be significant at the second stage of analyses (i.e., after

controlling for the effects of covariates) and covariates (children's age, gender, SES, and presence or absence of a clinical-level internalizing disorder), being the victim of physical or sexual abuse at home ($\beta = 1.15, p < .001$), domestic violence ($\beta = .44, p < .01$), living in a high-violence community ($\beta = .58, p < .001$), and experiencing AIDS-related stigma ($\beta = .68, p < .001$) were all found to be uniquely associated with children's risk of being bullied.

Protective factors for bullying

First we examined main effect relationships between putative protective factors and bullying victimization. Table 2 shows associations between each putative protective factor and bullying victimization both for unadjusted analyses and for analyses controlling for the effects of 4 covariates: children's age, gender, SES, and presence or absence of a clinical-level internalizing disorder. Children who reported greater sibling support were less likely to be bullied ($\beta = -.55, p < .001$), over and above any effects of covariates. Children were also less likely to be bullied if they reported having high levels of friend support ($\beta = -.48, p < .01$). The negative association between warmth at home and bullying victimization was no longer significant when controlling for the effects of covariates. School support was not found to be significantly associated with bullying victimization. Both sibling support ($\beta = -.41, p < .001$) and support from friends ($\beta = -.40, p < .001$) were found to be independently associated with children's likelihood of being bullied in multivariate analyses including all protective factors found to be significant at the second stage of analyses and covariates (Table 3).

Next, we tested the potential moderating effect of putative protective factors on the association between each risk factor and bullying victimization using a stepwise hierarchical regression model that included 2-by-2 interaction terms (risk factor by putative protective factor) predicting children's bullying victimization score. Risk and putative protective factors found to be significant in multiple regression analyses were included, resulting in 8 interactions: Abuse at home \times Peer support; Abuse at home \times Sibling support; Domestic violence \times Peer support; Domestic violence \times Sibling support; AIDS-related stigma \times Peer support; AIDS-related stigma \times Sibling support; Community violence \times Peer support; and Community violence \times Sibling support. Four interactions were significant: Peer support \times Stigma ($\beta = .34, t = 3.08, p < .01$); Peer support \times Abuse at home ($\beta = -.31, t = -2.84, p < .01$); Sibling support \times Abuse at home ($\beta = -.39, t = -2.65, p < .01$); and Peer support \times Domestic violence ($\beta = .20, t = 2.17, p < .05$). Significant interactions were further investigated using simple slopes analyses (Aiken & West, 1991) to determine whether high (+1 SD) and low levels (-1 SD) of the risk factor predicted level of bullying victimization at high and low levels of the protective factor (graphs available on request). Where children reported low AIDS-related stigma, high peer support reduced the level of bullying as expected. However when children reported high levels of AIDS-related stigma, high peer support was linked with an increased level of reported bullying victimization.

The moderating effect of peer support was stronger in cases of low abuse at home, though even where high rates of abuse were reported, peer support still helped to reduce the rate of bullying victimization. A similar effect was observed for peer support and domestic violence.

Sibling support helped to reduce the level of bullying victimization for children who reported abuse at home. The moderating effect of sibling support was stronger for children reporting higher levels of abuse.

Discussion, relevance and possible implications

This study shows high levels of bullying among children in poor, urban Cape Town—similar to those found in South African schools (Liang et al., 2007). While previous studies in sub-Saharan Africa have shown links between bullying and risky health behaviors, this adds new evidence that bullying is associated with childhood psychological problems of depression, anxiety, and post-traumatic stress. Bullying is also associated with the prevalence of clinical-level internalizing psychological disorder among children, and levels of disorder increase with levels of bullying—suggesting that a reduction in extent of bullying could lead to improvements in mental health outcomes.

This study also identifies groups of children who may be most at risk for being bullied. Findings show that children who are victimized within their home or community are also more likely to be victimized among their peers.

This evidence of victimization at multiple levels suggests a cycle of violence for a particularly vulnerable group of “poly-victimized” children. The similarity of these findings to other international studies of poly-victimization is notable; exposure to one type of victimization (including maltreatment, physical assault, bullying victimization, and witnessing community and family level violence) has been identified as a key predictor of exposure to other types of victimization in a large study of American children and youth (Finkelhor, Turner, Ormrod, & Hamby, 2009). Poly-victims were likely to experience victimization by peers at school, by family members at home and by a variety of individuals within their neighborhoods and communities. These highly victimized children were identified as being at elevated risk for symptoms of trauma (Turner, Finkelhor, & Ormrod, 2010). The connections between victimization in different spheres of children's lives also suggests that interventions and professionals working with children who are experiencing one of these difficulties—such as physical abuse—should be alert to the associated risks of other kinds of victimization. This is particularly crucial because strong evidence shows that abuse, domestic violence, and exposure to community violence are risk factors for lifetime mental health problems (Heim & Nemeroff, 2001; Hurt, Malmud, Brodsky, & Gianneta, 2001); children also exposed to bullying are likely to be at even higher risk of psychological distress.

Findings showed more children reporting bullying in higher-violence neighborhoods (even among a sample of communities characterized by violent crime and gangs). This suggests that interventions aiming to combat violence at the

Table 3
Details of measures used.

Main measures	<i>M</i> (<i>SD</i>) or (%)	Range	<i>N</i>	Internal consistency (α)	Example items
Bullying victimization	14.1 (5.5)	0–36	1026	.82	'In the past year, other kids kicked, punched or beat me up' (how many times)
Depression	2.6 (2.6)	0–14	1036	.67	'I am sad once in a while/many times/all the time'
Anxiety	11.2 (5.3)	0–28	991	.80	'I worry when I go to bed at night'
Post-traumatic stress	13.2 (12.9)	0–66	1022	.94	'Do you think about (or see pictures in your head of) what happened even when you don't want to?'
Suicidal ideation	.2 (.4)	0–2	1038	.67	'Sometimes I feel like killing myself'
Risk factor	<i>M</i> (<i>SD</i>) or (%)	Range	<i>N</i>		Example items
General risk factors					
Abuse at home	.3 (.5)	0–3	1039		'Has anyone made you do something with your private parts or with their private parts that you did not want to do?'
Domestic violence	.7 (1.9)	0–14	1039		'How many days last week were there arguments with adults hitting each other in your home?'
Community violence	1.6 (1.2)	0–5	1032		'Have you seen someone being shot?'
Food insecurity	13.1	0–7	1039		'Lindiwe and Buntu often don't have enough food at home. How many days this week did you not have enough food?'
Orphanhood-related risk factors					
Orphaned vs. non-orphaned	30.1	0–1	1039		Several sources, including teacher, social worker report, child report 'Buntu and Lindiwe's mother died a few years ago. Has anyone close to you died?'
Orphaned by AIDS vs. orphaned by other causes	10.9	0–1	1039		'Did your parent have any of these illnesses: tuberculosis; white patches in their mouths; shingles...'
Living on the streets	6.6	0–1	1039		Purposive sampling of streetchildren through day-shelters and feeding schemes
Child-headed household	1.3	0–1	1039		Purposive sampling of child-headed households through NGOs
Disrupted caregiving	4.6	0–1	1039		2 or more changes of primary caregiver in a child's lifetime, measured through 'Road of Life' activity
AIDS-related stigma	.6 (1.4)	0–8	1032		'Have you been teased because of someone in your family being unwell?' (α .90)
Caregiver ill-health	5.3	0–1	1028		Has your carer been unwell never/rarely/sometimes/very often
Protective factor	<i>M</i> (<i>SD</i>) or (%)	Range	<i>N</i>		Example items
Attending a sport, music/dance group	.8 (.7)	0–2	1038		'Do you go regularly to a dance group?'
Warmth at home	3.6 (.8)	0–4	1023		'Do you get the same food as other children who you live with?' I get more/less/about the same
Friend support	8.6 (2.2)	0–10	1038		'Are your group of close friends helpful when you have a personal problem?' (α .79)
Sibling support	7.5 (2.5)	0–9	1029		'Are your brothers or sisters helpful when you need money and other things?' (α .88)
School support	12.0 (3.2)	0–18	1030		'Is your teacher helpful when you have a personal problem?' (α .74)

neighborhood level may also have positive impacts on bullying reduction. In urban contexts, further research could valuably explore links between bullying, victimization, and gang membership. One group of children living in a particularly violent context are streetchildren—for whom daily life will often include drugs and crime. This study finds that streetchildren are also more likely to report experience of bullying from other children. It may be impossible to fully unpack the causes of this, as many children are living on the streets as a result of abuse at home, involvement in criminality, or of rejection by families due to stigmatized parental death. In addition, actions such as threatening and intimidation which comprise bullying behavior may also function as necessary survival tools within a competitive street subculture. While the present study did

not assess whether victimized children also engaged in bullying behaviors, other international studies of bully-victims have found that prior experience of victimization increases likelihood of later bullying behaviors (Barker, Arseneault, Fontaine, & Maughan, 2008).

Findings also showed that neither orphanhood, nor orphanhood by AIDS were associated with higher levels of bullying. However, exposure to AIDS-related stigma—being teased, treated badly, or gossiped about *due to illness in the family*—showed strong associations with being bullied. It is possible that these two constructs may be capturing some of the same experiences, but it is also possible that this supports qualitative data which suggests that visible familial AIDS-illness (with signs such as tuberculosis, rashes, and wasting) and continued associations of HIV with promiscuity, witchcraft, and poverty, make children a particular target for being bullied (Cluver & Gardner, 2007). Additionally, impacts of stigma on children (such as psychological distress, shame) may make them more vulnerable as individuals to victimization.

This study also identified factors which protect children—even particularly vulnerable ones—against being bullied. Support from close friends seems to buffer children against victimization, though this effect was only found in the context of lower levels of violence and abuse at home. It is possible that while overall peer support is protective, the buffering effect is less noticeable in particularly at-risk environments such as high levels of abuse or domestic violence and not helpful at all in cases of high levels of AIDS-related stigma. High levels of sibling support were found to reduce levels of bullying victimization in the context of abuse at home—particularly high levels of abuse. It is possible that positive relationships between siblings experiencing high levels of abuse at home may be particularly important in buffering the impact of abuse on bullying victimization. Possible mechanisms for the protective effects of peer and sibling support include both direct support (for example, strength in numbers) or indirect effects through improved individual levels of self-efficacy and confidence. Bullying interventions may benefit from targeting children's social relationships, particularly in high-risk communities. However, the presence of AIDS-related stigma seemed to render children's friendships even more vulnerable to bullying. This finding reflects similar confusion shown in qualitative studies of AIDS-affected children, in which peer groups are often simultaneous sources of support and bullying: My friends make me sad because they bully me and swear me out and make fun of me. . .but I don't mind because they're my friends (Cluver & Gardner, 2007). It is possible that the exceptionally high levels of stigma towards HIV+ people in these areas means that friendship groups at school or in the community are likely to single out children whose families are AIDS-affected. Other studies also suggest that AIDS-affected children may perceive bullying as an inevitable consequence of friendships outside known HIV-infected groups (Strode & Barrett Grant, 2001). Further research is essential to understand how to reduce both HIV stigma among children, and bullying of AIDS-affected children within established friendship groups.

Limitations of this study include the cross-sectional nature of the survey, which limits capacity to make causal inferences. However, some of the associations are unlikely to be causally confused—for example it is unlikely that domestic violence in the home occurs as a result of a child being bullied, or that living in a community with a high level of stabbings and shootings is as a result of being bullied. Furthermore, the associations observed in this study are unlikely to reflect coincidence or confounding, as indicated by the dose-response relationship observed between bullying victimization and psychological distress, and the fact that many of the risk and protective factors found to be significant in this study closely match those observed in diverse samples from the West using varied methods of measurement. The study relied—as do the vast majority of bullying studies—on child self-report. As bullied children are more likely to have pre-existing psychological problems relative to non-bullied children, this risks a possible confounding effect of bullied children perceiving greater levels of hardship in their lives. We hoped to diminish potential method overlap by first controlling for the effects of clinical-level psychological distress in analyses of risk and protective factors, and second by measuring—wherever possible—concrete experiences of risk or protective factors; such as specific acts of stigma, living on the streets or witnessing shootings, and stabbings. We also used a standardized bullying measure which focused on specific physical or verbal incidents of bullying.

The purposive nature of this sample limits the extent to which the findings can be generalized. However this sampling strategy has three notable strengths. First, it is the first known community sample to measure bullying in South Africa. Second, it purposively included highly vulnerable groups within the child population, such as streetchildren, child-headed households, and AIDS-orphaned children, who may not be easily reached through school-based surveys. It was important to examine levels of bullying among these groups in order to determine whether peer victimization was adding to other challenges in their lives. Third, this study design allowed us to distinguish different aspects of being in an AIDS-affected family, such as caregiving disruption, caregiver illness, orphanhood, and AIDS-related stigma, in order to understand more clearly the risks for children which may need to be targeted by interventions.

This is the largest known study of risk and protective factors for bullying in Africa. Findings showed high levels of bullying both inside and outside schools, and among both school-attending and non-attending children—suggesting the importance of not restricting future studies to examining school-based bullying. The study uses standardized tools with strong psychometric properties. It measures risk factors in different spheres of a child's life: community, family, and individual, and tests the potential protective value of sources of support both within and beyond the family.

Summary

Children in urban South Africa are facing high levels of bullying victimization. As levels of bullying victimization increase, so does child psychological distress, levels of psychological disorder, and suicidal ideation. Groups of children already known to be highly vulnerable are also vulnerable to bullying: those experiencing abuse or domestic violence at home, those in

highest-violence communities, those living on the streets, or experiencing AIDS-related stigma. The risk and protective factors for bullying victimization identified in this study suggest the importance of assessing bullying among high-risk groups. They also suggest that interventions addressing stigma, and bolstering peer and sibling support, may have positive impacts on reducing bullying.

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