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The Impact of Childhood Bullying among HIV-Positive Men: Psychosocial Correlates and Risk Factors

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Abstract

Objectives—While some studies have examined the deleterious effects of childhood bullying on adults, no studies to date have focused on the effects of bullying on Persons Living with HIV (PLH), a particularly at-risk population. PLH experience higher rates of childhood and adulthood physical and sexual abuse than the population at large, and experience of childhood abuse appears to be predictive of sexual and other risk behaviors in this population. Thus it remains critical to examine rates of childhood bullying and correlates of bullying in adult PLH.

Methods—A sample of 171 HIV-positive men over 18 years of age were recruited from the San Francisco Bay Area. All participants reported experiencing symptoms of traumatic stress. The participants were recruited as part of a larger study assessing a group intervention for individuals with HIV and symptoms of trauma. Self-report questionnaires were administered to assess participants' exposure to bullying in childhood and trauma symptoms in adulthood.

Results—Bullying was commonly reported by men in the current sample, with 91% of the sample endorsing having experienced some level of bullying before age 18. Having been bullied in childhood was significantly ($p < .05$) associated with methamphetamine use in adulthood, difficulties with mood, and with symptoms of trauma. Results of a hierarchical regression equation found that report of bullying in childhood predicted additional, unique variance in trauma symptoms in adulthood above and beyond the effect of exposure to other forms of trauma, resulting in a better-fitting model.

Conclusions—The current study highlights the association between rate of childhood bullying and symptoms of trauma in adulthood, accounting for the effect of exposure to other forms of trauma. Given the impact of trauma symptoms on disease progression in PLH, exposure to bullying must be considered in any intervention aiming to reduce trauma symptoms or improve mental or physical health among HIV-positive populations.

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Keywords

HIV/AIDS; bullying; trauma; risk behavior; men

Introduction

Bullying is a common and pernicious experience for American youth, with 24–29% of individuals reporting having experienced some bullying before age 18 (Seals & Young, 2003). Research into the psychological impact of childhood bullying has shown that exposure to bullying can lead to mood disorders such as depression and anxiety (e.g., McCabe et al., 2010), higher rates of suicidality (Klomek et al., 2009), and symptoms of posttraumatic stress disorder (PTSD; e.g., Capaccioli, 2010; Crosby, Oehler, & Capaccioli, 2010), both in childhood and in adulthood. Despite decades of research attention, recent media coverage of the tragic effects of bullying in high school and college-aged men make clear the need for further studies examining correlates of bullying in at-risk populations.

While some studies of bullying have focused specifically on at-risk populations, including lesbian, gay, and bisexual (LGB) or sexual minority individuals (e.g., Birkett, Espelage, & Koenig, 2009), very few studies have examined the relationship between people living with HIV (PLH) and the long-term mental health effects of childhood bullying. Given the link between mental health and disease progression in PLH (Leserman, 2008), this topic is of relevance both from a psychological and a public health standpoint. Thus, the current study examines the impact of exposure to bullying in childhood on trauma symptoms in a sample of HIV-positive adult men.

Bullying and mental health

Previous research has shown that childhood bullying has lasting effects on mental health. Self report of having been bullied in childhood was shown as a risk factor for later depression (Klomek, Sourander, Kumpulainen, Piha, Tamminen, Moilanen, Almqvist, & Gould, 2008), as well as a decrease in levels of life satisfaction (Chen & Wei, 2011.) Similarly, adults who report being victims of childhood bullying are twice as likely to attempt suicide (Meltzer, Vostanis, Ford, Pebbington & Dennis, 2011). Research has also looked at differences in the long term effects of bullying on LGB or sexual minority youth versus heterosexual youth, finding that sexual minority youth are at greater risk of being bullied (Berlan, Corliss, Field, Goodman & Austin, 2010) and that these sexual minority youth are more likely to develop symptoms of PTSD (Roberts et al., 2010).

PLH report high levels of exposure to traumatic stress (Gore-Felton & Koopman, 2002; Kimerling et al., 1999), including childhood traumas such as sexual and physical abuse (Kalichman et al., 2002; Martinez, Israelski, Walker, & Koopman, 2002; Martinez, Hosek, & Carleton, 2009; Welles et al., 2009). Exposure to traumatic stress, particularly childhood traumatic stress, is related to sexual and other risk behavior that may facilitate transmission of HIV (Briere & Runtz, 1987; Cavanaugh & Classen, 2009; Gore-Felton et al., 2006; Gore-Felton & Koopman, 2002; Holmes, 1997; Kalichman et al., 2002; Sachs-Ericsson, Cromer, Hernandez, & Kendall-Tackett, 2009; Welles et al., 2009) and as such is important to assess when developing interventions to reduce HIV transmission rates. It is unknown, to date, how experience of childhood bullying may contribute to rates of trauma among PLH; similarly, no studies to date have specifically examined the relationship between bullying and risk and health outcomes among PLH, a population where both mental and physical health outcomes are of paramount concern.

Bullying and physical health

Only over the past decade has research begun to examine the effects of childhood bullying on physical health outcomes. In one recent study, Rigby (2001) showed a significant association between childhood victimization and high levels of enduring physical distress, including somatic and physical complaints. It is important to note that these complaints had a delayed onset, beginning on average three years after the start of victimization. Similarly, Haavet, Straand, Saugstad, and Grunfeld (2004) found that common illnesses in adolescence such as hay fever, eczema, asthma, headache, neck or shoulder pain, sore throat, and lower respiratory tract infection were significantly associated with negative life experiences including being bullied at school. In a meta-analysis of recent studies, risk for psychosomatic problems was found to be significantly higher among those victimized by bullying (Gini & Pozzoli, 2009).

Among studies examining adult health consequences of being bullied as children, adults who reported childhood bully victimization have been found to experience significantly poorer physical health, including lower health-related quality of life in their adulthood when compared to those who had not been bullied (Allison, Roeger, & Reinfeld-Kirkman, 2009). In examining workplace bullying, Hansen, Høgh, Persson (2011) found that adults who reported frequent bully victimization also reported poorer mental health and had a 24.8% lower salivary cortisol concentration (one of the primary stress hormones linked to health problems and disease progression) compared with those not bullied, indicating physiological consequences as a result of bullying. Similarly, in a study of health predictors and sickness absence among hospital staff, victims of bullying were shown to have higher body mass and prevalence of chronic disease, and their rates of medically- and self-certified periods of sickness absence were higher than those of non-bullied staff members (Kivimäki, Elovainio and Vahtera, 2000). Tuckey, Dollard, Saebel, Berry, and Narelle (2010) also looked at health problems in the workplace and found significant effects associated with exposure to workplace bullying and poor cardiovascular health. However, no literature to date has studied the enduring physical health consequences of childhood bullying in the specific context of HIV.

Bullying and risk behavior

A primary concern in HIV-positive populations is prediction of risk behavior, including substance use and sexual risk behavior. Accurately modeling predictors of these risk behaviors can inform efforts to reduce the spread of HIV infection and to improve the quality of life and health outcomes of PLH. Existing literature suggests that bullying during childhood is predictive of subsequent risk behavior as an adult. These risk behaviors can take the form of increased daily heavy smoking (Niemela, Brunstein-Klomek, Sillanmaki, Helenius, Piha, Kumpulainen, Moilanen, Tamminen, Almqvist, Sourander, 2010), abuse of alcohol (Topper, Castellanos-Ryan, Mackie, Conrod, 2001) and other forms of substance abuse (Luk, Wang, Simons-Morton, 2010). Some studies have revealed more nuanced outcomes of childhood bullying, indicating that the type of bullying experienced has an impact on the type of risk behavior individuals endorse. One study found physical victimization to be significantly related to cigarette and alcohol use while relational victimization was related to all categories of drug use (cigarette and alcohol use as well as alcohol and marijuana abuse; Sullivan, Farrell, & Kliewer, 2006). Additionally, gender differences have also been identified: physical victimization was more strongly related to aggression and delinquent behaviors among boys than girls, while relational victimization was more strongly related to physical aggression and marijuana use among girls, but more strongly related to relational aggression among boys (Sullivan, Farrell, & Kliewer, 2006). Specifically among sexual minorities, victims of bullying showed higher rates of substance use disorders in adulthood (Mays & Cochran, 2001; Hughes, McCabe, Wiltschko, West,

Boyd, 2010). In addition to risky substance use, early and frequent peer victimization predicted externalizing behaviors such as rage reactions, road rage, excessive spending, and binge eating (Sansone, Lam, Wiederman, 2010). While it is evident that bullying increases the risk on those who experience it as a child, little is known about the impact of bullying on individuals living with HIV.

The Current Study

The current study extends the existing literature on the psychosocial correlates of bullying by examining the prevalence of childhood bullying in a sample of adult men living with HIV, looking at both heterosexual and sexual minority identified men. We then determine associations among experience of childhood bullying, mental and physical health in adulthood, and endorsement of risk behavior. Finally, we examine the contribution of bullying to report of trauma symptoms in adulthood, over and above other forms of trauma.

H1: Bullying will be commonly self-reported by adult men living with HIV, and will be more commonly reported by self-identified sexual minority men (i.e., men who have sex with men) than by self-identified sexual majority men (i.e., men who have sex with women).

H2: Higher self-report of bullying in childhood and adolescence will be associated with poorer self-report of mental and physical health and with more HIV transmission risk factors.

H3: Bullying will predict unique variance in self-reported trauma symptoms in adulthood, over and above other traumatic experiences, and this relationship will be moderated by sexual minority status such that sexual minority men will display a stronger association between bullying and trauma symptoms in adulthood.

Methods

Participants

The sample consisted of 171 HIV-positive men living in the San Francisco Bay Area who reported experiencing symptoms of trauma. The participants were recruited as part of a larger study assessing a group intervention for individuals with HIV and symptoms of trauma and were recruited from clinics and community based organizations. Data were drawn from baseline assessments performed before participants were randomized to intervention or control conditions.

The inclusion criteria for the current study were as follows: (a) 18 years or older; (b) HIV-positive; (c) reported engaging in HIV risk behavior (unprotected anal or vaginal sex, sharing needles, contracting a sexually transmitted infection) in the past 3 months; (d) reported experiencing one or more trauma-related symptoms (i.e., reexperiencing, hyperarousal, or avoidance) in the past 3 months; (e) could speak/understand English; and (f) responded to the Multidimensional Peer-Victimization Self-report scale (MPVS), our measure of bullying victimization. The MPVS was added to the computerized survey after assessments had begun. Of the original 196 men who completed baseline assessments, only 171 completed the MPVS; the other 25 participants completed the assessment before the MPVS was added. The participants who did and did not complete the MPVS did not differ on any demographic characteristics, nor on bullying, trauma exposure, trauma symptoms, or any mental or physical health variables of interest to the current study (all $p > .05$).

Furthermore, for the purpose of analyses, two variables were used to ascertain sexual minority status: self-reported sexual behavior over the past three months and self-reported sexual orientation. Participants were categorized as “men who have sex with men” (MSM) if

they reported having had sex with a male partner over the past three months and/or they identified as gay or bisexual. Participants were categorized as “men who have sex with women” (MSW) if they denied having sex with a male partner over the past three months and identified as heterosexual. This process captured MSM who might not identify as gay or bisexual, but who still engage in same-sex sexual behavior.

All participants provided informed consent to participate in the study; the informed consent document was read aloud and consent was obtained from each participant by a trained research assistant. All study procedures were reviewed and approved by an Institutional Review Board.

Demographic characteristics of the sample are summarized in Table 1. The sample had a mean age of 45.46 years, ranging from 23 to 64 ($SD = 8.13$ years). A total of 37.4% self-identified as Caucasian, 28.7% as African-American, and 21.6% as Hispanic/Latino. The vast majority of the sample reported being unemployed (87.1%) and having an annual income of less than \$20,000 during the past year (71.3%). Approximately one-quarter of the sample reported completing high school/GED, 14% reported obtaining an AA degree, and another quarter reported obtaining a college degree. The majority of the sample reported having never been married (67.3%) and relatively equal numbers of men reported being married (14.6%) or divorced (11.7%). A majority of the men (76.6%) were classified as men who have sex with men, using the approach described above.

Measures

Self-report questionnaires were administered via Audio Computer Assisted Self-Interview (ACASI), asking about participants' exposure to bullying in childhood and trauma symptoms and other psychosocial correlates in adulthood.

Demographics—The Demographics Questionnaire is a self-report measure that assesses a number of sociodemographic variables, including age, gender, education, income, employment, sexual orientation, relationship history and status. The item assessing sexual orientation was used to derive the sexual minority status variable, as described above.

Bullying—Exposure to bullying was measured using the Multidimensional Peer-Victimization Self-report scale (MPVS), which measures physical victimization, social manipulation, verbal victimization, and attacks on property before age 18 (Mynard & Stephen, 2000). In the current study, we excluded items measuring attacks on property, using an eleven item version of the scale. The participant is asked to report how often he experienced each type of victimization using a 0–2 scale where 0 = Not at all, 1 = Once, and 2 = More than once. A total score can be derived by summing all items; in addition, descriptive statistics can be derived by examining how often participants experienced each type of victimization. Retrospective reports of childhood bullying by adults have been shown to be stable and reliable (Rivers, 2001). In the current study, the MPVS demonstrated good internal consistency, $\alpha = .93$.

Trauma symptoms—Trauma symptoms were measured using the Impact of Events Scale-Revised (IES-R), which incorporates three subscales of Avoidance, Intrusion, and Hyperarousal symptoms (Weiss & Marmar, 1997). The 22 item self-report IES-R questionnaire measures symptomatic response in the past 7 days to a specific traumatic experience. The participant is asked to report degree of distress related to each symptom using a 0–4 scale where 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, and 4 = Extremely. In the current study, the IES-R demonstrated good internal consistency, $\alpha = .94$.

Exposure to trauma—Exposure to other forms of trauma was measured with the 24-item self-report Trauma History Questionnaire (THQ) (Green, 1996). The THQ measures the participant's exposure to traumatic events, which are divided into three categories: crimes, general disaster and trauma, and sexual and physical assault. For the current study, following the recommendation of Green (1996), we summed the total number of types of traumatic events that participants had experienced before age 18 as a proxy for childhood trauma history. In the current study, this childhood trauma history scale, which ranged from 0 to 24 types of traumatic events experienced, demonstrated good internal consistency ($\alpha = .83$).

Psychosocial correlates—Potential psychosocial correlates of bullying were measured using a variety of questionnaires. The State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999), a 57-item measure, was used to assess symptoms and behaviors of anger and hostility. The inventory includes two subscales for State Anger and Trait Anger, both of which can be converted into T-scores for comparison with a normed population of adults age 16 and older. In the current study, the State ($\alpha = .94$) and the Trait ($\alpha = .72$) Anger subscales both demonstrated adequate internal consistency.

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977, Radloff & Locke, 1986), a 20-item measure that targets cognitive, affective, and vegetative symptoms was used to assess depression. This measure is widely used across diverse psychiatric and non-psychiatric populations. In addition to total scores, the item assessing suicidal ideation ("Do you feel like hurting or killing yourself?") was examined separately as a proxy for suicidality. In the current study, the CES-D demonstrated adequate internal consistency, $\alpha = .78$.

The Functional Assessment of Human Immunodeficiency Virus Infection (FAHI; Peterman, 1997), a 44-item measure adapted from functional assessment measures applied to other chronic illnesses, was used to assess HIV-related quality of life. Of the 44 items on the FAHI, 17 measure specific HIV-related concerns while 27 measure general chronic illness-related concerns. The measure includes Physical well-being, Emotional well-being, Functional and global well-being, Social well-being, and Cognitive functioning subscales. The FAHI demonstrated good consistency in the current study, $\alpha = 0.84$.

The HIV Symptom Checklist (Folkman, Chesney, Pollack, & Coates, 1993), a 20-item self-report questionnaire assessing HIV-related symptoms that include pain, fatigue, unintentional weight loss, cold or flu-like symptoms such as fever and coughing, neuropathy, and skin rashes, was used to determine HIV severity. The sum of the number of symptoms rated as "severe" was used as a total score for this measure. The HIV Symptom Checklist demonstrated good consistency in the current study, $\alpha = 0.87$.

The Drug and Alcohol Use Questionnaire (Rotheram-Borus, Koopman, & Bradley, 1988), a 58-item measure, was used to assess substance use. Participants reported the frequency of use over the past 3 months of alcohol, cocaine/crack, non-prescribed tranquilizers, stimulants, analgesics, inhalants, marijuana, hallucinogens, tobacco, and heroin, with each substance assessed separately for frequency.

Data Analysis

Descriptive statistics were computed for demographic characteristics as well as all questionnaires included in the current study. To address hypothesis 1, we specifically examined descriptives for prevalence of bullying. An independent samples t-test was used to compare MSM and MSW on rates of bullying. To address hypothesis 2, Pearson correlation coefficients were computed to examine the bivariate associations between experiences of

childhood bullying, childhood trauma, trauma symptoms, and other potential psychosocial correlates. To address hypothesis 3, we constructed a hierarchical regression equation to examine the relative contribution of childhood bullying and other forms of childhood trauma to endorsement of trauma symptoms by men living with HIV. We entered the predictors in three blocks. In the first block we entered participant age and the continuous childhood trauma history score, to control for trauma history and any effects of recall. In the second block we entered the continuous total score for the MPVS, to see whether experience of bullying predicted additional variance in trauma symptoms above and beyond other forms of childhood trauma. We also entered the derived sexual minority status variable in the second block; finally, in the third block, we entered the interaction term between bullying and sexual minority status, to test whether bullying has a greater effect on trauma symptoms among MSM than among MSW. Given the association between bullying and other forms of childhood trauma, all continuous variables were centered prior to inclusion in the regression model. All statistical analyses were performed using SPSS 17.0 (SPSS Inc., Chicago, IL).

Results

Prevalence of Bullying and Other Forms of Trauma

Bullying was commonly reported by men in the current sample, with 90.1% ($n = 154$) of the sample endorsing having experienced some level of bullying before age 18 and 21.1% ($n = 36$) of the sample endorsing having experienced all 11 assessed forms of bullying “more than once.” The most commonly reported form of bullying was being called names, endorsed by 85.4% ($n = 146$) of the sample, followed by being sworn at, endorsed by 83.0% ($n = 142$) of the sample, and being made fun of “because of the way you are,” also endorsed by 83.0% ($n = 142$) of the sample. Less commonly reported forms of bullying included being beaten up, endorsed by 51.5% ($n = 88$) of the sample, and being kicked, endorsed by 53.2% ($n = 91$) of the sample.

Scores on the Bullying Questionnaire were higher among MSM ($M = 13.82$) than among MSW ($M = 11.10$; $t = -2.08$, $p = .03$). Examining specific types of bullying experienced at least once, MSM were more likely to endorse having been punched ($\chi^2 = 17.68$, $p < .01$), hurt physically ($\chi^2 = 8.07$, $p = .01$), beaten up ($\chi^2 = 8.47$, $p = .01$), called names ($\chi^2 = 14.00$, $p < .01$), and made fun of “because of who [they] are” ($\chi^2 = 19.74$, $p < .01$), while they were children or adolescents.

Other forms of childhood trauma were also commonly reported by men in the current sample, with men reporting an average of 2.56 (range = 0 – 15, standard deviation = 2.72) types of trauma experienced before age 18. Number of types of trauma experienced did not differ between MSM ($M = 2.52$) and MSW ($M = 2.47$; $p > .05$).

Psychosocial Correlates of Bullying

Having been bullied in childhood was significantly ($p < .05$) and positively associated with several psychosocial factors and outcomes, including self-report of total number of traumatic experiences in childhood ($r = .33$), trauma symptoms ($r = .23$), dissociation symptoms ($r = .21$), state ($r = .24$) and trait ($r = .31$) anger, depression ($r = .19$) and suicidal ideation ($r = .20$). Having been bullied in childhood was significantly ($p < .05$) and negatively associated with quality of life factors, including physical ($r = -.20$) and emotional ($r = -.19$) well-being. Finally, having been bullied was significantly ($p < .05$) and positively associated with a risk factor, namely methamphetamine use in adulthood ($r = .25$). Having been bullied was not significantly associated with functional well-being, HIV symptom severity, unprotected sexual encounters, alcohol use, or cigarette use (all $p > .05$). See Table 2 for further details.

Bullying as a predictor of trauma symptoms

Finally, to examine the contribution of bullying to prediction of variance in adult symptoms of trauma, we constructed a hierarchical equation regressing trauma symptoms onto other experiences of childhood trauma and onto bullying. In block 1 of this equation, participant age ($\beta = -.22$, $p < .01$) and total number of traumatic experiences in childhood ($\beta = .17$, $p < .05$) were significant predictors of trauma symptoms in adulthood, resulting in a significant model ($R^2 = .07$, $p < .01$). In block 2 of the equation, report of bullying in childhood predicted additional, unique variance in trauma symptoms in adulthood ($\beta = .17$, $p < .05$) above and beyond the effect of exposure to other childhood trauma, resulting in a better-fitting model ($\Delta R^2 = .03$, $p < .05$). However, sexual minority status was not a significant predictor of variance in trauma symptoms in adulthood ($p > .05$). Similarly, in block 3, the interaction between bullying and sexual minority status was not a significant predictor of variance in trauma symptoms in adulthood ($p > .05$), and thus sexual minority status did not significantly moderate the relationship between bullying and trauma symptoms. See Table 3 for details.

Discussion

Bullying is a remarkably common experience reported by HIV-positive men. In this sample, mental health correlates associated with exposure to bullying in childhood included more severe symptoms of trauma, difficulties with anger, and report of suicidal ideation. These findings underscore the recent attention paid in the media to the prevalence and impact of bullying. It is likely, based on the findings of the current study, that the effects of bullying do not end in childhood for most victims. Rather, the effects may continue into adulthood and be linked with other psychosocial and risk-related consequences. This is of particular concern in the context of HIV-positive men.

The rate of bullying reported in the current study was high, with 91% of participants reporting at least some form of bullying. This may be due to the fact that the majority of the participants (i.e., 77%) reported being MSM. Given that sexual minority youth are more likely to be bullied in childhood and adolescence (Berlan et al., 2010), the high number of sexual minority men in our sample may have been more likely to experience and report bullying than the population at large. Indeed, in this study, as in Berlan et al. (2010), sexual minority adults endorsed higher rates of bullying than heterosexual adults. However, sexual minority status did not serve as a significant moderator of the relationship between bullying and trauma symptoms; that is, bullying had a similar association with trauma symptoms for both MSM and MSW. This lack of significant moderation may be due to the fact that HIV-positive individuals in general are more likely to experience bullying in childhood and adolescence than the population as a whole. It may also highlight the pervasive impact of bullying, implying that bullying is associated with trauma symptoms for both MSM and MSW, and possibly for other groups. Parsing these distinctions will provide fertile ground for future research.

Further, understanding the impact of childhood bully victimization and its long-term psychological effects on sexual minority identified young adults is critical, given the ramifications of sexuality-based bullying. Future studies should delineate additional psychosocial correlates of childhood bullying as experienced by sexual minority populations and PLH, detail the types of bullying experienced by gay vs. bisexual vs. heterosexual youth, and explore the effects of bullying on physical as well as mental health among PLH and other populations diagnosed with chronic illnesses.

The current study affirms that experience of childhood bullying is associated with symptoms of trauma in adulthood, above and beyond the effect of exposure to other forms of childhood

trauma. This finding indicates that bullying is to some extent a unique form of interpersonal trauma and should be assessed in any study examining childhood abuse or neglect. Given the impact of trauma symptoms on disease progression in PLH, exposure to bullying must be considered in any intervention aiming to reduce trauma symptoms or improve mental or physical health among HIV-positive populations. Consideration of the impact of bullying may include assessing for bullying before beginning an intervention, paying specific attention to bullying when designing trauma-relevant exposures or teaching trauma-management skills, and being supportive of individuals' discussion of their bullying experiences during the intervention. The need to assess for exposure to bullying is highlighted further by the relationship between bullying and methamphetamine use shown in the current study.

There are several limitations of this study. First, although questionnaires were administered using ACASI technology and via headset to ensure privacy of responses, the self-reported data may be biased and inaccurate due to over- or underreporting of substance abuse and exposure to trauma in order to align with expected social norms or study expectations. In addition, the unreliability of memory recall should be considered. Participants' recollections of childhood bullying experiences or traumatic experiences may be exaggerated or altered by experiences in adulthood. However, previous studies have effectively used recall methodologies to explore the link between childhood bullying and adult mental health symptoms (e.g., Gladstone, Parker, & Malhi, 2006), and we believe that our study's methodology is in line with this previous research. Furthermore, caution must be used when generalizing results to the larger population when using a convenience sample. Because this study depended on volunteers to participate, the sample may not be representative of the total population. These and limitations to cross-sectional methods should be considered when planning future research.

Overall, the mechanism that might lead from bullying, or from any type of childhood trauma, to risk behavior in adulthood has not yet been fully explicated. While future studies should examine the unique nature of bullying in relation to other forms of childhood trauma, research could fruitfully attend to this mechanistic question: how, and for whom, does experience of trauma lead to risk behavior? This question could be applied to PLH, to sexual minority populations, and to the population at large, in order to examine nuances in the mechanism leading from trauma to risk that might vary from group to group and within communities.

Our aim in the current study is to expand existing findings on the effects of bullying to the mental health, physical health and risk behaviors of people living with HIV. Our findings show that childhood bullying is prevalent in the lives of HIV-positive men living in the San Francisco Bay Area. In addition, bullying was linked in this population to an increase in trauma symptoms and negative psychosocial outcomes in adulthood, and hence should be further assessed in future studies of trauma and risk behavior. The current study also highlights the need for prospective, longitudinal research that can assess the long-term interactions among bullying experiences, traumatic symptoms, and health outcomes.

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Table 1

Demographic characteristics of a sample of HIV-positive men reporting symptoms of trauma (N = 171).

Variable	N	%
Race/Ethnicity		
Caucasian	64	37.4
African-American	49	28.7
Latino	37	21.6
Other	21	12.3
Income		
Under \$20,000	122	71.3
\$20,000 or over	49	28.7
Employment		
Employed full or part time	22	12.9
Unemployed	149	87.1
Education		
High School or less	64	37.4
More than High School	107	65.5
Sexual Minority Status		
Man who has sex with men (MSM)	40	23.4
Man who has sex with women (MSW)	131	76.6

Table 2

Correlations between bullying and health-related variables in a sample of HIV-positive men reporting symptoms of trauma (N = 171).

Variable name	Correlation with bullying
Traumatic experiences in childhood	.33 **
Trauma symptoms	.23 **
Dissociation symptoms	.21 **
State anger	.24 **
Trait anger	.31 **
Depression	.21 *
Suicidal ideation	.20 *
Physical well-being	-.20 *
Emotional well-being	-.19 *
Functional well-being	-.06
HIV symptom severity	.14
Unprotected sexual encounters	.05
Alcohol use	.12
Cigarette use	.10
Methamphetamine use	.25 **

Note:

*
p < .05,

**
p < .01 (two-tailed)

Table 3

Hierarchical regression predicting variance in trauma symptoms from age, childhood traumatic experiences, childhood bullying experiences and sexual minority status (N = 171).

Variable	β , Step 1	β , Step 2	β , Step 3
Step 1: $R^2 = .07^{**}$			
Participant Age	-.22 ^{**}	-.19 [*]	-.19 [*]
Childhood Traumatic Experiences	.17 [*]	.12	.13
Step 2: $\Delta R^2 = .03^{*}$			
Childhood Bullying Experiences		.17 [*]	.16 [*]
Sexual Minority Status		.04	.05
Step 3: $\Delta R^2 < .01$			
Bullying by Sexual Minority Status			.03

Note. Final $R^2 = .10$;

^{*}
 $p < .05$,

^{**}
 $p < .01$ (two-tailed)