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## The Role of Sexual Orientation in School-Based Victimization: A Meta-Analysis

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### Abstract

School-based victimization is associated with poorer developmental, academic, and health outcomes. This meta-analytic review compared the mean levels of school-based victimization experienced by sexual minority youth to those of heterosexual youth, and examined moderators of this difference. Results from 18 independent studies ( $N = 56,752$  participants) suggest that sexual minority youth experience moderately higher levels of school-based victimization compared to heterosexual youth ( $d = .33$ ). This effect varied by two study characteristics: the average effect size increased over time and was larger in studies that had a greater proportion of male participants. Results highlight the need for future research on school-based victimization to include measures of sexual orientation and for interventions to include a component that addresses sexual orientation.

### Keywords

Sexual orientation; school-based victimization; meta-analysis

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Peer victimization in the school context has been identified as one of the most serious challenges of contemporary times. Estimates suggest that nearly 6 to 15 percent of students experience frequent school-based victimization (i.e., at least once a week; Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001); a finding which accounts for over 1.6 million youth in the U.S. In this meta-analytic review, peer victimization involves the receipt of any act of aggression from similar-aged peers (Finkelhor & Dziuba-Leatherman, 1994). That is, victimization includes any aggressive behavior that aims to hurt another person (i.e., the peer victims), regardless of the form (i.e., overt, relational, or cyber aggression; see Card, Stucky, Sawalani, & Little, 2008;) or function (i.e., proactive and reactive aggression; Card & Little, 2006) of the act. Peer aggression has been referred to in some studies as “bullying,” although these behaviors are subsumed under the definition of aggression.

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Research has documented that school-based victimization is associated with lower academic achievement (e.g., Nakamoto & Schwartz, 2010) and attainment (Macmillan & Hagan, 2004), and poorer mental (e.g., Hawker & Boulton, 2000) and physical health (e.g., Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006). Experimental research is lacking that examines the directionality of the associations among victimization and these academic and health outcomes; however, several personal characteristics, interpersonal experiences (e.g., peer or family relationships), and contextual features (e.g., features of the school or neighborhood) have been identified as *antecedents* of school-based victimization (for review, see Card, Isaacs, & Hodges, 2007). Further, these individual characteristics and contextual and interpersonal relationship features are often considered in comprehensive school-based interventions to reduce peer aggression (e.g., Olweus, 1993; Kärnä, Voeten, Little, Poskiparta, Kaljonen, & Salmivalli, 2011).

One antecedent of school-based victimization that has been identified in the literature is actual or perceived identification with a non-heterosexual identity (e.g., gay, lesbian, or bisexual). Several studies have documented that sexual minority youth experience high levels of victimization in their schools (e.g., Birkett, Espelage, & Koenig, 2009; Botempo & D'Augelli, 2002; Kosciw, Greytak, Diaz, & Bartkiewicz, 2010; Williams, Connolly, Pepler, & Craig, 2003). Our use of the term *sexual minority youth* is intended as an inclusive strategy, given that the studies included in this analysis used different methods of identifying non-heterosexual youth, including sexual identity (lesbian, gay, bisexual, or queer), sexual behavior, or sexual attraction. A recent nationwide study of lesbian, gay, bisexual, and transgender (LGBT) students found that over 80% reported verbal harassment, 40% reported physical harassment, and over 50% had experienced cyberbullying (Kosciw et al., 2010). Additionally, recent high profile events, such as the suicides of numerous adolescent boys and young men in 2010 and 2011 who identified as or were assumed to be gay, elevated the public's awareness of the association between sexual orientation and school-based victimization (e.g., Hoffman, 2009; Katz, 2010).

Yet, research studies and interventions that focus on school-based victimization often fail to include sexual orientation as a key correlate in the research (e.g., Kärnä et al., 2011), and most literature reviews on the problem of school-based victimization often fail to mention sexual orientation (e.g., Card et al., 2007; Cook, Williams, Guerra, Kim, & Sadek, 2010). On the other hand, the evidence that sexual minority youth are at elevated risk for school-based victimization is inconclusive because of some of the methodological obstacles in studying this population: for instance, achieving random samples with adequate subsample sizes, definitional complexities of who constitutes a sexual minority, reliance on self-reports, and a lack of inclusion of sexual orientation measures in general peer relations research (for a comprehensive review of methodological issues related to LGBT research, Institute of Medicine, 2011). Thus, without examining the magnitude of difference between sexual orientation groups across this diverse literature, a strong conclusion about the role of sexual orientation in school-based victimization cannot be ascertained. Further, if, on average, sexual minority youth report elevated levels of school-based victimization compared to their heterosexual peers, this finding would warrant the attention of researchers who study school-based victimization within the larger adolescent population (e.g., students from school-based

samples), such that future studies should include sexual orientation as a key correlate. This finding would be particularly important given that the sexual minority youth-specific literature on peer victimization and studies that include a focus on the general adolescent population have remained relatively separate (Espelage & Swearer, 2008), and as noted above, several key reviews of peer victimization fail to include attention to sexual orientation.

Therefore, the purpose of this meta-analytic review is to quantitatively synthesize the literature that comparatively examines the school-based victimization experiences of sexual minority and heterosexual youth. Specifically, this meta-analysis seeks to address whether sexual minority youth experience elevated levels of school-based victimization compared to their heterosexual peers, which would identify sexual orientation as a key correlate to be considered in future studies. Beyond examining whether a disparity in the level of school-based victimization exists, this study also examines whether this difference is dependent on several study design and sample characteristics.

### Potential Moderators: Study Design and Sample Characteristics

Study design and sample characteristics often have an impact on the effect sizes found in educational and social science research. This meta-analysis considers the following characteristics as potential moderators (i.e., characteristics that explain effect size variability) of the sexual orientation difference in mean levels of school-based victimization: mean age of the sample; proportion of male and female students in the sample; proportion of sexual minority youth in the sample; proportion of ethnic minority youth in the sample; method of sexual orientation measurement that was utilized in the study, and the year that the study was conducted. Each of these characteristics is reviewed in depth in the paragraphs that follow.

#### Age

Mean-level differences in school-based victimization between sexual minority and heterosexual youth might be expected to vary by age; however, the directionality of this association is uncertain. Conceptually, more youth are aware of and disclose their sexual minority status in mid- to late-adolescence: the average age for awareness of attraction to the same or opposite sex is approximately 10 years (Herdt & McClintock, 2000), the average age for self-identifying as gay, lesbian, bisexual, or queer is 16 years (e.g., Floyd & Stein, 2002), and the average age for coming out to others is 18 years (e.g., Floyd & Stein, 2002). Thus, the majority of youth might not disclose their sexual orientation until high school and therefore may experience victimization at later ages. On the other hand, research has identified that harassment based on sexual orientation and gender nonconformity begins as early as elementary school (GLSEN & Harris Interactive, 2012), suggesting that because harassment is present before many students report disclosing their sexual orientation to others, there may be no age difference in effect sizes across studies. Further, research suggests that the use of biased-based language and homophobic bullying tends to decrease throughout adolescence (e.g., Horn, 2007; Poteat & DiGiovanni, 2010). If this is the case, then one might expect to see a negative association between the average age of the sample

and the difference in mean levels of victimization by sexual orientation. Given these conflicting conceptual arguments (i.e., increasing, stagnant, or decreasing effect size with age), no *a priori* hypotheses were made regarding the potential moderating effect of age on the mean level difference of victimization by sexual orientation.

## Gender

Several studies have documented that sexual minority males are at greater risk than their female counterparts for experiencing homophobic-motivated victimization (e.g., Pascoe, 2007; Poteat & Espelage, 2007). Specifically, the use of the homophobic language and harassment has been found to exist predominantly among male peer groups in order to assert masculinity and dominance over other males (e.g., Pascoe, 2007; Poteat & DiGiovanni, 2010). Thus, one might also expect that studies that included greater proportions of males in the sample would find larger differences in the mean levels of school-based victimization reported by sexual minority and heterosexual youth. Nonetheless, there is clear evidence that sexual minority females also experience peer victimization in their schools based on their sexual orientation (e.g., Ma'ayan, 2003; Payne, 2007), thus their experiences should not be discounted. Based on the larger body of literature, we hypothesize that the difference in levels of school-based victimization between sexual minority and heterosexual youth will be larger in studies that included a greater proportion of males.

## Race and ethnicity

Mean level differences in peer victimization may also systematically vary by the racial and ethnic minority composition of samples. In addition to victimization that can be attributed to sexual orientation, racial and ethnic minority youth likely experience discrimination and victimization based on their race and ethnicity. A recent report by Diaz and Kosciw (2009) documents that ethnic minority LGBT students experience high rates of school-based victimization based on race and ethnicity and sexual orientation; however, they did not examine whether or not ethnic minority LGBT students reported greater amounts of victimization compared to White LGBT students. Further, an earlier report by Kosciw and Diaz (2006) found that while White LGBT students reported less racial- and ethnicity-motivated harassment compared to ethnic minority youth, there were no differences in levels of harassment based on sexual orientation or gender identity. Given that racial and ethnic minority LGBT youth report higher levels of victimization based both on their race or ethnicity and their sexual orientation (e.g., Diaz & Kosciw, 2009), we hypothesize that the difference in levels of school-based victimization between sexual minority and heterosexual youth will be larger in studies that included a greater proportion of racial and ethnic minorities.

## Measurement of sexual orientation

To date, research has not thoroughly examined whether or not there are differences in mean levels of school-based victimization by method of sexual orientation measurement (e.g., sexual identity, attraction, behavior). For clarification, *sexual identity* refers to the labeling of oneself as lesbian, gay, bisexual, queer, or heterosexual; whereas, *sexual attraction* refers to the emotional, sexual, or romantic attraction to other persons (i.e., same- or opposite-

gendered person). Finally, *sexual behavior* refers to the actual sexual behavior that one engages in with a same or opposite-gendered person. The question remains compelling of whether measures that use attraction (e.g., “Are you attracted to females?”), sexual identity (e.g., “What is your sexual orientation?”), sexual behavior (e.g., “What is the gender of your current or most recent sexual partner?”), or a combination of measurement approaches (i.e., the survey asks at least 2 or more of the possible sexual orientation measures) will result in differences in levels of school-based victimization between sexual minority and heterosexual youth (e.g., Igartua, Thombs, Burgos, & Montoro, 2009). Although variability in level of disclosure of sexual orientation inevitably exists among participants in a given study (regardless of the method used to assess sexual orientation), one may expect that differences in victimization may be larger in studies that used sexual identity-based measurement methods because the youth in these studies may be more likely to be “out” about their sexual orientation. This may be the case given that disclosure is positively associated with victimization (e.g., D’Augelli, Pilkington, & Hershberger, 2002; Pilkington & D’Augelli, 1995). Alternatively, youth who are *perceived* to be a sexual minority, regardless of actual self-labeled sexual identity, may be a target for peer victimization. Nonetheless, given evidence that disclosure is associated higher levels of victimization and the notion that identity is more likely to be shared with peers compared to attractions or sexual behaviors, we hypothesize that the difference in levels of school-based victimization between sexual minority and heterosexual youth will be larger in studies that assessed sexual orientation with an identity measure compared to attraction or behavioral measures.

### Year of study

Finally, some scholars argue that the social changes of the last decade make LGBT identities less relevant to contemporary youth (e.g., Cohler & Hammack, 2007; Savin-Williams, 2005), including the possibility that LGBT identities and homophobia have “declining significance” for youth (McCormack, 2012). On the other hand, recent attention to suicides of actual or presumed gay males that were related to school-based victimization (e.g., Hoffman, 2009; Katz, 2010) suggests that homophobic victimization has not dissipated but is ever-present and salient for youth. By examining the year that the study was conducted, we test whether victimization has become more (or less) pronounced over time for sexual minority youth in studies ranging from the early 1990s to the mid-2000s.

### The Current Study

To summarize, the purpose of this meta-analysis is two-fold. First, this study examines the mean-level difference in school-based victimization between sexual minority and heterosexual youth. Second, this study examines several potential moderators of this effect size, including attention to sample characteristics (e.g., percentage of males in study) and study methodology (e.g., method of sexual orientation measurement).

## Method

### Literature Search Procedures

Studies that reported mean levels of school-based victimization for both sexual minority and heterosexual students were primarily obtained through literature searches of the following online databases: PsycInfo, PsycArticles, Sociological Abstracts, ERIC, Medline, Gender Studies Database, and ProQuest Dissertations and Theses. In each of the electronic databases the following combinations of keywords were used to find relevant articles: “gay or lesbian or bisexual or queer or LGBT or GLBT or homosexual or sexual minority or same-sex attraction or both-sex attraction or MSM (men who have sex with men) or WSW (women who have sex with women)” and “victim\* or bully\* or aggress\* or violen\*” and “school” and “adolescen\* or youth or young people or teen\*”. The initial search took place in early February of 2010 and a follow-up search was conducted in February of 2011. After the electronic search was complete, prominent sections of articles (i.e., the introduction, literature review, discussion, and conclusion sections) were read by a research assistant to identify any citations that were relevant to the purpose of this meta-analysis and that were not originally identified in the electronic searches. Additionally, forward searches using Social Science Citation Index were conducted on early reports and major reviews of sexual minority experiences with school-based victimization (e.g., Chesir-Teran, 2003; Hershberger & D’Augelli, 1995; Horn & Nucci, 2006). An additional search was conducted using Google Scholar to identify any additional articles or non-published resources. This method, albeit unconventional, was used because the target study population (i.e., sexual minority youth) may be the focus of non-profit research organizations (e.g., Gay, Lesbian, Straight Education Network; Safe Schools Coalition of Washington) who publish research findings that would not be identified in traditional academic literature searches. This search methodology returned one research brief that met study criteria (i.e., Safe Schools Coalition of Washington, 1999).

### Study Inclusion and Exclusion Criteria

Studies were included in this meta-analysis based on the following criteria: (1) the sample included both sexual minority and heterosexual participants and (2) the victimization reported in the study was specific to the secondary school context (i.e., middle or high school). Studies were excluded from this analysis if they were qualitative in nature, contained no comparison heterosexual sample (or samples that did not include sexual minorities), or did not report relevant statistics. (e.g., mean levels of school-based victimization). If the relevant statistics appeared to be available from the information provided in the text of the report, the original study author was contacted to obtain this information. Initially 92 reports were identified as being relevant; however, after taking into account the inclusion and exclusion criteria, a total of 18 independent studies presented in 25 reports (27%) were included in the meta-analysis. A range of measures within these 18 studies assessed school-based victimization, including adapted forms of the Conflict Tactics Scale (Straus, 1979), victimization items included in the Youth Risk Behavior Surveys (e.g., “How often in the past year have you been threatened with a weapon on school property?”), the University of Illinois Aggression Scale (Espelage & Holt, 2001), among others. Given that few studies assessed victimization specific to sexual orientation (i.e., victimized or

harassed because of one's sexual orientation), these measures were not included in the current study.

### Coding of Studies

Several key study and sample characteristics were coded including sample size; mean age; the year the study was conducted; the percentage of sexual minority participants; the percentages of male and female participants; the percentages of racial and ethnic minority and White participants; and the measurement used to identify sexual minority participants (i.e., attraction, identity, behavior, or a combination of approaches).

Effect sizes were coded as the standardized mean difference (Cohen's  $d$ ) between sexual minority and heterosexual students on reported school-based victimization. While sexual orientation can be conceptualized as continuous (e.g., such as the Kinsey scale; Kinsey, Pomeroy, & Martin, 1948), most studies that have examined sexual minority experiences in schools tend to categorize participants into discrete subgroups (e.g., straight compared to gay or lesbian [which are often combined into one sexual minority group]). Therefore, a categorical comparison of subgroups is useful for this meta-analysis in the context of the current literature. Further, due to the limits of current meta-analysis techniques and because the majority of studies included in this review only examined difference between sexual minority and heterosexual youth, only two groups could be compared. Reports that separated out gay, lesbian, bisexual, and other sexual orientations (e.g., queer) were analyzed such that all sexual minority participants were collapsed into one comparison group; multiple groups were collapsed using the sample sizes, means, and standard deviations to arrive at one estimate for the sexual minority subsample.

### Plan of Analysis

Effect sizes were represented as Cohen's  $d$ , a standardized mean difference between two groups. In the case that a study reported results in another metric (e.g., a correlation coefficient) the data were transformed to  $d$  using standard procedures (Rosenthal, 1991). In several instances, multiple reports from the same study (e.g., the National Longitudinal Study of Adolescent Health [the Add Health Study]) were identified. To avoid violating the assumption of independence, results from these reports were combined using weighted averaging to create one independent study-level effect size (Card, 2011).

Effect sizes from 18 independent studies were first combined using a weighted fixed-effects model. After testing for heterogeneity in the average effect size, a decision was made to describe the average effect size using a random-effects model, which models variability in population effect sizes and also allows for greater generalizability of results (Hedges & Vevea, 1998). Moderator analyses were then conducted to identify study and sample characteristics that are associated with higher or lower effect sizes; that is, these analyses investigate whether the average effect size consistently vary by certain study or sample characteristics (e.g., age).

Study and sample characteristics that were tested as moderators included: mean age of sample, percentage of males in the study, percentage of sexual minority youth in the study,

measurement of sexual orientation, percentage of ethnic minorities in the study, and year of study. Because of the small number of studies included in this meta-analysis (Hedges & Pigott, 2001), each moderator was first tested independently to increase statistical power. After each moderator was tested separately, significant moderators from the previous step were tested in a multiple regression model to examine the uniqueness of each effect.

## Results

### Descriptive Information

Effect sizes and coded study characteristics are summarized in Table 1. The 18 independent studies included a total of 56,752 participants. The mean age of participants was 17.00 ( $SD = 4.86$ )<sup>1</sup>. On average, gender in the studies included in this meta-analysis was equally divided between males (50.26%) and females (49.74%)<sup>2</sup>. The samples included primarily White participants (74.55%). Most of the research was conducted in the 2000s ( $n = 10$ ) and the other studies were conducted during the 1990s ( $n = 7$ ); the range included studies conducted in 1993 to 2007 ( $M = 2000.43$ ,  $SD = 4.16$ ). The average percentage of sexual minority participants in studies was 21.07%. Sexual orientation was measured in four possible ways: attraction ( $n = 3$ ), identity ( $n = 10$ ), behavior ( $n = 1$ ), or a combination a methods ( $n = 4$ ). Descriptively, eleven of the studies were conducted in the United States whereas the other seven took place outside of the U.S. Four of these studies took place in Canada, one in the United Kingdom, one in Ireland, and one in Austria.

### Central Tendencies and Heterogeneity

Across the 18 studies, the magnitude of difference in school-based victimization between sexual minority and heterosexual youth ranged from  $-0.02$  to  $0.82$ . The analysis of a fixed-effects model revealed significant heterogeneity in the effect size ( $Q_{\text{Total}}(df = 17) = 130.29$ ,  $p < .001$ ).  $I^2$ , an indicator of the magnitude of heterogeneity present in the effect size (Higgins & Thompson, 2002), was equal to 89.64%. Due to the large amount of significant variability in the effect size – that cannot simply be ascribed to random sampling fluctuations – the central tendency of the effect size was calculated using a random-effects model. On average, reports of school-based victimization were greater for sexual minorities compared to levels of victimization reported by their heterosexual peers ( $d = 0.33$ , 95% C.I. = 0.23, 0.42;  $z = 6.73$ ,  $p < .001$ ). This effect size points to the small- to medium-sized differential experience of victimization at school for these two populations, based on the Cohen's (1988) recommendations ("small",  $d = .2$ , "medium",  $d = .5$ , and "large",  $d = .8$ ). That is, sexual minority youth tended to report significantly elevated levels of school-based victimization compared to heterosexual youth.

<sup>1</sup>The mean age of study participants is artificially inflated because of the inclusion of two retrospective reports. To examine whether these two studies should remain in the sample, a re-analysis of the effects of interest were conducted and effect sizes were not significantly different without the retrospective studies. Thus, the decision was made to include these two studies in the meta-analysis. Results are available upon request.

<sup>2</sup>Notably, none of the studies identified for the current study explicitly included transgender participants (i.e., while there may have been transgender participants in these samples, they were not identified in the description of the sample)



## Moderators of School-based Victimization

Due to the significant heterogeneity in the effect size and the previously specified research questions, moderators were tested to examine variation in the effect size in a fixed-effects model using regression-based methods (Card, 2011). As described earlier, each moderator was first tested separately to examine if the predictor was significant. After the individual tests were completed, all significant moderators from the previous step were included in a multiple regression model to test for uniqueness of prediction.

**Initial test results**—The mean age of the samples ( $n = 18$ ;  $z = -0.21$ ,  $p > .05$ ) and the percentage of sexual minority participants in studies ( $n = 18$ ;  $z = 0.75$ ,  $p > .05$ ) were not significant moderators of the effect size.

The percentage of males in studies was significantly predictive of variation in the effect size ( $n = 18$ ;  $b = 0.14$ ,  $z = 6.09$ ,  $p < .001$ ). Specifically, studies with greater percentages of males had larger effect sizes. For instance, model implied results suggest that studies with 75% males would have an average effect size of  $d = 0.59$  compared to a much smaller average effect size for studies with 25% males ( $d = 0.09$ ).

The percentage of ethnic minorities in studies was also a significant moderator of the effect size ( $n = 15$ ,  $b = -0.01$ ,  $z = -4.30$ ,  $p < .001$ ). This finding suggests that studies with larger samples of ethnic minorities find smaller differences between sexual minority and heterosexual youth. Model implied results suggested that the average effect size is  $d = 0.19$  for studies with 50% ethnic minorities, compared to  $d = .50$  for studies with no ethnic minorities (0%).

Sexual orientation measurement method was tested in regression and studies that used identity as the orientation measure was the reference group ( $n = 10$ ). There were no significant findings for studies using attraction measures ( $n = 3$ ,  $z = 0.46$ ,  $p > .05$ ) or multiple methods ( $n = 4$ ,  $z = -1.80$ ,  $p > .05$ ). However, the one study that used a sexual behavior measure was significant ( $n = 1$ ,  $b = -0.21$ ,  $z = -2.07$ ,  $p < .05$ ). Given that this is only one study (DuRant, Krowchuk, & Sinal, 1998) caution should be noted in interpreting this effect; however, this finding implies that studies that use sexual behavior as a marker for sexual orientation may find smaller differences between sexual minority and heterosexual youth in levels of school-based victimization.

Finally, the year a study was conducted was a significant predictor of the variation in effect sizes ( $n = 17$ ,  $b = 0.02$ ,  $z = 6.70$ ,  $p < .001$ ). This finding suggests that over the two decades the effect size became larger between sexual minority youth and their heterosexual peers. To simplify this effect, we examined a dichotomous split (1990s versus the 2000s), and this revealed that studies that were conducted during the 1990s on average reported an effect size of  $d = 0.20$  compared to studies in the 2000s that on average reported an effect size of  $d = 0.38$ , suggesting that sexual minority youth reported slightly higher rates of victimization compared to their heterosexual peers in the 2000s compared to the 1990s.

**Multiple regression results**—Only three variables were included in the final regression model (see Table 2): the percentage of males in the study, the percentage of ethnic

minorities in the study, and the year of study. This analysis only included 15 studies because of missing values. When all three moderators were included simultaneously, only the percentage of males in the study ( $b = .02, z = 7.01, p < .001$ ) and the year of study remained significant ( $b = .03, z = 6.31, p < .001$ ). The direction for those effects continued to be in the same direction: studies with higher proportions of males reported larger effect sizes and as did studies that were conducted later versus earlier (2000s versus 1990s). Further, these two study characteristics explained a relatively large percentage of the variation in the effect size (adjusted  $R^2 = .58$ )

### Publication Bias

Publication bias is present in any type of review (qualitative or quantitative; Sutton, 2009). Tests were conducted to evaluate how publication bias affected the results of this meta-analysis, given that reports that include null or negative (i.e., opposite than expected directions in associations) findings are less likely to be published in peer-reviewed journal (e.g., Card, 2011). The first attempt to manage the threat of publication bias in this review was to search for unpublished works (e.g., dissertations). Four of the 18 studies (22%) used in this meta-analysis came from dissertations or other unpublished reports. The second method that was used to examine the threat of publication bias was to test type of publication as a moderator of the effect size. If publication bias exists, one would expect that there would be significant moderation by publication type, such that published studies would find larger effect sizes compared to unpublished studies. The result of this test for this study was not significant ( $n = 18, z = -0.03, p > .05$ ).

In addition to this test of moderation, a correlation between sample size and effect sizes in studies was examined. A significant negative correlation between these two variables would be expected if publication bias was a threat: studies that have smaller samples might only find large effect sizes because of low statistical power and studies with smaller samples and small or null effect sizes are less likely to be published (Card, 2011). The correlation between sample size and effect sizes for this meta-analysis was  $r = -0.11 (p > .05)$ , suggesting again that publication bias was not a threat to the results of this meta-analysis. Thus, these results suggest that publication bias is not a probable threat to the results of this meta-analysis.

### Discussion

The results of this meta-analysis suggest that sexual minority youth experience elevated levels of victimization in schools during middle and high school compared to their heterosexual peers. Importantly, we acknowledge that victimization is detrimental to all youth, regardless of sexual orientation; thus, we are not suggesting that the victimization experiences of heterosexual youth are less problematic. Instead, our findings point to the need for researchers that study peer victimization in the school context to address and include issues of sexual orientation in their studies. Further, findings from the moderation analyses suggest that sexual minority males are at heightened risk for school-based victimization, a finding that is consistent with prior research on sexual minority experiences with school-based victimization (e.g., Pascoe, 2007; Poteat & Espelage, 2007). Yet, as stated

earlier, the experiences of sexual minority females should not be diminished: previous studies have identified that these youth are at risk for victimization and experience the detrimental effects of pervasive heterosexism in schools (e.g., Ma'ayan, 2003; Payne, 2007). Additionally, moderation analyses revealed that difference between sexual minority and heterosexual peers increased over time based on when the data for the study was collected. This finding suggests that school-based victimization based on sexual orientation is a *persistent* and *lasting* problem that has not dissipated, even as the larger political context has become more affirming of LGBT persons (e.g., Ball, 2010). Of note, the effect size did not significantly differ by the mean age of sample, percentage of sexual minority youth in the study, measurement of sexual orientation, or percentage of ethnic minorities in the study (notably, the percentage of ethnic minorities in the study was significant at the bivariate level, but not in the multivariate analysis).

The small to medium-sized effect size found in this study suggests that the answer to the question, 'Are sexual minority youth at elevated risk for school-based victimization?' is a probable 'yes'. This finding makes a contribution to the literature by confirming that sexual minority youth are certainly *at risk* for school-based victimization and experience elevated levels of school-based victimization compared to their heterosexual peers. Further, the nuances of the moderation analyses suggest that research must address the complex interaction that exists between gender and sexuality, given that this pattern was stronger for males compared to females. Finally, given that the effect size was stronger in studies that were conducted in more contemporary times, we can conclude with little doubt that the school environment remains hostile for contemporary sexual minority youth. Thus, there are several implications for future research on school-based victimization and for school policy.

### Implications for Researchers and Practice

Sexual orientation has been repeatedly found to be an antecedent of victimization, yet studies of general adolescent peer victimization often lack the inclusion of sexual orientation measures (see reviews of general adolescent victimization literature, e.g., Card, Isaacs, & Hodges, 2007; 2008). Although including measures of sexual orientation are not always easy when working with schools (e.g., Poteat, 2007), measuring sexual orientation and including it as a predictor of school-based victimization would arguably increase the variance accounted for in interindividual differences in school-based victimization experiences. Further, the adolescent victimization literature will be more comprehensive and realistic if future studies include measures of sexual orientation and include them as characteristics associated with victimization. The findings presented here also suggest that measurement of sexual orientation is not associated with differential effect sizes, except for the limited finding that the one study that utilized sexual behavior to assess sexual orientation had a smaller effect size compared to other methods. Thus, although most argue that multiple indicators of sexual orientation represent the best practice (e.g., Igartua et al., 2009), it may suffice for researchers to use only one measure (e.g., sexual identity or sexual attraction or sexual behavior), given ethical and time concerns such as participant burden. Nonetheless, if possible, future studies should include multiple measures to further tease apart any differences in the association between sexual orientation measurement and reported levels of school-based victimization by sexual orientation groups.

A second issue that researchers may experience when trying to incorporate sexual orientation into their research with youth is apprehension by institutional review boards (IRBs) to approve protocols that include questions that assess sexual orientation. One consideration is the perceived controversial nature of measures of sexual identity, attraction, or behavior. Yet although the inclusion of such measures in studies of youth may be perceived to be controversial, it is notable that there are growing numbers of studies that include such measures as routine demographic indicators. For example, between 2000 and 2009, nine states and six cities include survey measures of sexual identity, attraction, or behavior on their population-wide Youth Risk Behavior Surveys (Kann, et al., 2011); thus, an important message for IRBs is that such questions are simply a new scientific standard. Another consideration involves ethical issues related specifically to research with sexual minority adolescents. Although a complete discussion is beyond the scope of this paper, others (D'Augelli & Grossman, 2006; Mustanski, 2011) have carefully identified the vulnerability of the LGBT youth population, their particular risks in participating in social science research, and strategies to ameliorate those risks. Mustanski (2011) outlines seven specific recommendations to investigators for addressing IRB concerns.

As noted above, the findings presented in this meta-analysis have several implications for school practice and policy. Schools should consider targeted programs and policies that help make schools safer places for sexual minority youth. Consistent with research that conceptualizes and evaluates the effectiveness of school practices in reducing the victimization experienced by sexual minority youth, the following are some suggested school policies and practices that attempt to make schools safer contexts for this population: (a) enumerated school harassment policies that include both sexual orientation and gender identity and expression; (b) training of school personnel about ways to support sexual minority students and intervene in harassment; (c) implementation of Gay-Straight Alliances (GSAs) in schools to provide peer networks for sexual minority youth and their allies; (d) curriculum that includes content about LGBT individuals, families, and issues; and (e) accessible LGBT-related information for students in schools (Human Rights Watch, 2001; Lipkin, 1999; O'Shaughnessy, Russell, Heck, Calhoun, & Laub, 2004; Perrotti & Westheimer, 2001). Nonetheless, there is currently a lack of empirically validated school-based interventions and policies for this population and future research is needed that includes attention to sexual orientation when assessing the efficacy of school-based bullying prevention programs.

Further, given that much of the research on sexual minority youth – including this review – describes the risks that this population encounters, it is also important to address the ways in which sexual minority youth can act as change agents in their school environments in resistance to the dominant discourse and culture of heteronormativity. In fact, LGBT youth have been at the forefront of school-based advocacy for safe and fair schools (e.g., Russell, Toomey, Crockett, & Laub, 2010). Thus, it is important to note that while sexual minority youth often experience hostility in their ecological contexts (e.g., school, family), many of these youth often play a critical role in advocating for safer school environments and resisting heteronormative expectations (e.g., Russell, Muraco, Subramaniam, & Laub, 2009). Future research is needed that examines the complex intersection between agency, resistance, and experiences with victimization: for example, does engagement in social

justice movements to increase school safety for LGBT youth help to buffer one's personal experience with victimization?

### Limitations and Future Directions

Although this review provides new information about the school-based victimization experiences of sexual minority youth, it is not without limitations. First, this meta-analysis is limited in statistical power by the small number of studies that could be identified and which met the inclusion criteria. The small sample of studies also limited the ability to examine potential moderators with adequate statistical power. Thus, future research should re-examine moderators explored in this study once a considerable number of additional studies have been conducted that include this information. Further, other compelling moderators, such as level of disclosure about sexual orientation to others (e.g., peers, family members) could not be explored given that very few studies reported this covariate. A second compelling moderator could include a nuanced examination of location (e.g., neighborhood characteristics, cultural norms). For instance, scholars have noted that LGBT youth in rural areas experience greater levels of victimization compared to youth in urban areas (e.g., Kosciw et al., 2010); however, because of the lack of information available in the current literature, this moderator was unable to be tested in this study. Further, investigations that include attention to more complex indicators of location, such as contextual neighborhood characteristics (e.g., proportion of same-sex couples or proportion of registered Democrats versus Republicans; Hatzenbuehler, 2011), may be more meaningful than a simplified dichotomous examination (e.g., urban vs. rural). Similarly, future studies should attend to issues of how the cultural norms in different countries, or within different regions of a country, may be differentially associated with sexual minority youth experiences in schools. For instance, do youth in states or countries that have same-sex marriage laws vary significantly from youth who are located in states or countries that ban same-sex marriage?

Second, this meta-analysis was limited to only examining the mean level of general victimization (defined broadly to incorporate multiple forms and severity-levels of victimization). In line with other research, it may be important for future research to consider different forms (e.g., overt versus relational; Card et al., 2007; 2008) of victimization and whether sexual minority and heterosexual students experience these forms differentially. For instance, do sexual minority males experience greater amounts of overt victimization compared to heterosexual males? Understanding these potential differences would allow for more effective prevention and intervention strategies to be implemented in schools, such that limited resources could be targeted to reducing overt versus relational types of victimization with attention to sexual minority youth.

Finally, this meta-analysis was unable to explore the possibility that sexual minority youth experience greater levels of victimization that is bias-motivated. Importantly, other studies have documented that bias-motivated school-based victimization is more strongly related to negative health outcomes compared to general school-based victimization (e.g., Toomey, Ryan, Diaz, Card, & Russell, 2010). Further, a recent representative study of adolescents documented that bias-based harassment at school (e.g., based on sexual orientation, race, religion), compared to non-biased-based or no harassment, was associated with greater risk

for comprised health and health behaviors (Russell, Sinclair, Poteat, & Koenig, 2012). Thus, future studies should incorporate measures of bias-motivated victimization in order to assess the potential for differential association between victimization and well-being among heterosexual and sexual minority adolescents.

## Conclusions

Over the past twenty years, research on school-based victimization and health outcomes for sexual minority youth has dramatically increased (Espelage & Swearer, 2008). Likewise, there has been an abundance of empirical research pertaining to the general adolescent population's experiences with peer victimization (Graham, 2006). These two literatures, however, have remained relatively separate (Diamond, 2003; Espelage & Swearer, 2008). The effectiveness of prevention and intervention programs may improve if integration occurs between these two literatures (as well as other bias-related victimization literatures). Ultimately, by sharing information across areas of studies, research practices will be advanced. The findings presented here imply that it is imperative that the general adolescent literature begin to acknowledge and include sexual minority participants in studies of school-based victimization and that sexual orientation be included in comprehensive, school-based interventions to reduce and prevent peer aggression (including bullying preventions).

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**Table 1**

Citations for Included Studies, Coded Sample and Study Characteristics, and Effect Sizes by Study

Study #	Citation	Total n	Mean Age	% Male	% Sexual Minority	Sexual Orientation Measurement	% Ethnic Minority	Year of Study	Study Location	Cohen's <i>d</i>
1	Busseri et al. 2006	3,876	15.71	48.00	4.00	Attraction	43.00	2001	Canada	0.49
2	Dane County Youth Survey (Study averages)	10,649	15.80	49.50	15.53	Identity	24.35	2005	U.S.	0.37
2a	Birkett et al. 2009	467	15.80	49.30	16.70	Identity	27.30	2005	U.S.	0.26
2b	Espelage et al. 2008	13,921	15.80	49.70	14.35	Identity	21.40	2005	U.S.	0.37
2c	Poteat et al. 2009	13,223	15.86	49.72	15.31	Identity	21.20	2005	U.S.	0.41
3	Williams et al. 2005	194	16.05	46.39	50.00	Identity	31.00	2001	Canada	0.28
4	Goodenow et al. 2006	3,637	16.00	51.19	5.55	Multiple (I, B)	29.56	1999	U.S.	0.29
5	Rhee 2003	177	19.60	44.00	43.50	Identity	42.00	---	U.S.	-0.03
6	Williams et al. 2003	260	15.44	46.15	50.00	Identity	26.00	2001	Canada	0.38
7	1995 Massachusetts and Vermont YRBS (Study averages)	5,348	16.05	75.10	4.28	Multiple (I, B)	19.57	1995	U.S.	0.67
7a	Botempo & D'Augelli 2002	9,188	16.00	50.2	3.40	Multiple (I, B)	---	1995	U.S.	1.29
7b	Durant et al. 1998	3,886	16.10	100	8.70	Behavior	2.50	1995	U.S.	0.28
7c	Ganofalo et al. 1998	4,159	---	---	2.50	Identity	28.10	1995	U.S.	0.35
8	Rivers & Noret 2008	106	13.83	67.92	50.00	Attraction	10.38	2003	United Kingdom	0.11
9	Add Health Study (Study averages)	14,180	15.46	48.35	7.13	Multiple (A, B)	47.26	1995.3	U.S.	0.12
9a	Consolacion 2008	11,756	15.46	---	6.63	Attraction	---	1996	U.S.	0.26
9b	Williams 2009	18,844	---	49.08	7.5	Multiple (A, B)	47.26	1995	U.S.	0.08
9c	Russell & Joyner 2001	11,940	---	47.62	7.26	Attraction	---	1995	U.S.	0.07

Study #	Citation	Total n	Mean Age	% Male	% Sexual Minority	Sexual Orientation Measurement	% Ethnic Minority	Year of Study	Study Location	Cohen's <i>d</i>
10	Gruber & Fineran 2008	516	14.50	57.00	9.00	Identity	13.73	2005	U.S.	0.44
11	McNamee et al. 2008	803	16.00	40.55	8.80	Attraction	---	2005	Ireland	0.20
12	Williams 2001	140	15.54	45.71	50.00	Identity	24.00	1998	Canada	0.14
13	Glazier 2009	2,408	15.00	51.50	10.70	Identity	32.60	2007	U.S.	0.75
14	Faulkner & Cranston 1998	1,668	16.30	54.20	6.40	Behavior	23.20	1993	U.S.	0.14
15	Fineran 2001	691	15.80	42.84	8.97	Identity	8.40	1999	U.S.	0.50
16	Safe Schools Coalition of Washington 1999	7,477	15.50	---	4.43	Identity	---	1995	U.S.	0.09
17	Pföderl & Fartacek 2009	290	35.87	50.00	48.97	Multiple (A, I)	---	2004	Austria	0.35
18	Berlan et al. 2010	7,559	17.56	35.98	2.09	Identity	6.70	2001	U.S.	0.09
<i>Average</i>		3,332	17.00	50.26	21.07	---	25.45	2000.4	---	0.33

Note. A = attraction, I = identity, B = behavior, SBY = school-based victimization. Cohen's *d* effect sizes, the standardized mean difference between two groups on a variable, are interpreted using the following guidelines: "small" ( $d = .2$ ), "medium" ( $d = .5$ ), and "large" ( $d = .8$ ) (Cohen, 1988).

**Table 2**

Results from Multiple Regression Predicting Variance in the Overall Effect Size

	<b>b</b>	<b>se</b>	<b>Z</b>
% Male Participants	.02	.00	7.01***
% Racial/Ethnic Minority Participants	.00	.00	0.62
Year of Study	.03	.00	6.31***
$R^2$	.58		

*Notes.* N = 15. The standard errors presented in the table are adjusted.

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