Developmental Trends in Peer Victimization and Emotional Distress in LGB and Heterosexual Youth

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KEY WORDS
peer victimization, emotional distress, developmental trends, longitudinal analysis, lesbian, gay, bisexual, adolescents

ABBREVIATIONS
CFI—comparative fit index
df—degrees of freedom
CI—confidence interval
HLM—hierarchical linear model
LSYPE—Longitudinal Study of Young People in England
OR—odds ratio
RMSEA—root mean standard error of approximation
SEM—structural equation model
TLI—Tucker-Lewis index

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WHAT’S KNOWN ON THIS SUBJECT: Peer victimization predicts numerous health risks. Lesbian, gay, and bisexual (LGB)-identified youth report greater peer victimization than do heterosexual-identified youth. No longitudinal studies have been conducted on developmental trends of peer victimization and emotional distress among LGB and heterosexual youth.

WHAT THIS STUDY ADDS: We provide the first longitudinal evidence on developmental trends of peer victimization and emotional distress for LGB- and heterosexual-identified youth. The findings suggest peer victimization of LGB-identified youth decreases in absolute, but not necessarily relative, terms and contributes to later emotional distress disparities.

abstract

OBJECTIVES: This study had 2 objectives: Our first objective was to provide the first evidence of developmental trends in victimization rates for lesbian, gay, and bisexual (LGB-) and heterosexual-identified youth, both in absolute and relative terms, and to examine differences by gender. Our second objective was to examine links between victimization, sexual identity, and later emotional distress.

METHODS: Data are from a nationally representative prospective cohort study of youth in England were collected annually between 2004 and 2010. Our final analytic dataset includes 4135 participants with data at all 7 waves; 4.5% (n = 187) identified as LGB. Analyses included hierarchical linear modeling, propensity score matching, and structural equation modeling.

RESULTS: LGB victimization rates decreased in absolute terms. However, trends in relative rates were more nuanced: Gay/bisexual-identified boys became more likely to be victimized compared with heterosexual-identified boys (wave 1: odds ratio [OR] = 1.78, P = .011; wave 7: OR = 3.95, P = .001), whereas relative rates among girls approached parity (wave 1: OR = 1.95, P = .001; wave 7: OR = 1.18, P = .689), suggesting different LGB–heterosexual relative victimization rate trends for boys and girls. Early victimization and emotional distress explained about 50% of later LGB–heterosexual emotional distress disparities for both boys and girls (each P < .015).

CONCLUSIONS: Victimization of LGB youth decreases in absolute, but not necessarily relative, terms. The findings suggest that addressing LGB victimization during adolescence is critical to reducing LGB–heterosexual emotional distress disparities but additional support may be necessary to fully eliminate these disparities. Pediatrics 2013;131:1–8
Peer victimization of youth is associated with numerous health risks, including suicidal ideation,1–4 suicide attempts,1,3,5,6 depression and anxiety,1,2,7 psychotic symptoms,8 and sexual risk.5 Although many youth experience peer victimization,9,10 youth who identify as lesbian, gay, or bisexual (LGB) tend to experience higher rates of peer victimization than do their heterosexual-identified peers.3,5,11–15 These heightened levels of peer victimization for LGB youth have been linked to their disproportionate levels of health risks in cross-sectional studies,3,5,6,16,17 retrospective studies,18 and meta-analyses.13 Given evidence on the damaging health effects of victimization and the disproportionate amount of victimization LGB individuals face, it is important to understand (1) developmental trends in victimization rates for LGB youth and (2) whether the higher victimization experienced by LGB youth (relative to heterosexual peers) has adverse consequences for their later emotional distress.

First, with respect to developmental trends in victimization rates, we hypothesize a general downward trend in absolute levels of reported peer victimization. This prediction is motivated by previous studies using cross-sectional data, which found that peer victimization tends to be lower among older adolescents than among younger adolescents.10,15,19 However, because adults exhibit stronger gender-norm expectations for boys than for girls and tend to report greater hostility toward gay/bisexual boys than toward lesbian/bisexual girls,20–23 we also hypothesize that victimization rates after secondary/high school will remain disproportionately high for gay/bisexual boys but not for lesbian/bisexual girls relative to their heterosexual peers. Second, with respect to the issue of victimization and emotional distress, we hypothesize that the disproportionate early victimization experienced by LGB youth will predict their elevated levels of emotional distress. However, we also hypothesize that significant LGB–heterosexual emotional distress disparities may persist that are not explained by peer victimization or previous emotional distress disparities. No previous studies have explored the links between victimization, sexual identity, and emotional distress disparities longitudinally; however, evidence from cross-sectional and retrospective studies is consistent with our theory of partial mediation.3,5,6,13–18,24

**METHODS**

**Study Population**

Data come from the Longitudinal Study of Young People in England (LSYPE; http://www.esds.ac.uk/doc/5545/mrdoc/UKDA/UKDA_Study_5545_information.htm), a nationally representative panel study of students who attended year 9 in the spring of 2004 (and were 13 to 14 years of age; born between September 1, 1989 and August 31, 1990; year 9 is the equivalent of grade 8 in the United States). Data were collected annually through 2010 (when the youth were 19 to 20 years of age) by the Department for Education in the United Kingdom, for a total of 7 waves of data. At each wave, youth were interviewed in person, via telephone, or via the internet. Interview data were also collected from the youths’ parents and school administrators during waves 1 to 4. The LSYPE used a 2-stage cluster stratified sampling design: schools were stratified on the basis of school type (eg, public, private), proportion of students receiving free lunch (an index of socioeconomic status), and academic performance of the school. A subsample of schools within each stratum was selected to account for the complex sampling design and to ensure that the results are nationally representative for the types of students retained in our sample (discussed next).

**Analytic Data Restrictions**

To reduce the possibility of differential race-, ethnicity-, or gender-based bullying for LGB and heterosexual youth, we restricted the sample to only youth who identified as “White-British” (86% of LGB-identified youth, 70% of heterosexual-identified youth),† and performed analyses fully interacted with gender (for the hierarchical linear models) or separately by gender (for the structural equation models [SEMs]). To guard against including youth who did not take the survey seriously, we restricted analyses to youth who reported the same gender at waves 1, 2, and 4 (8 students in our final sample were missing responses to this question in wave 3). Finally, to ensure a balanced sample, we retained participants on the basis of school type (eg, public, private), proportion of students receiving free lunch (an index of socioeconomic status), and academic performance of the school. A subsample of schools within each stratum was selected to account for the complex sampling design and to ensure that the results are nationally representative for the types of students retained in our sample (discussed next).

†Fifteen other race-ethnicity categories accounted for the remaining 14% of LGB-identified and 30% of heterosexual-identified participants. Each of these race-ethnicity groups had too few LGB-identified youth to obtain reliable estimates.
who responded to the victimization questions at each wave. The final analytic sample included 4135 participants (n = 2049 boys; n = 2086 girls).

**Measures**

**LGB Identification**

At waves 6 and 7, youth were asked to state which of the following terms best describes them: heterosexual/straight, gay/lesbian, bisexual, or other. We coded youth as LGB if they identified at gay/lesbian or bisexual during either wave. Preliminary analyses revealed no statistically significant differences in victimization or emotional distress between lesbian/gay- and bisexual-identified youth; thus, these youth were treated as 1 category for our analyses. A total of 187 participants (4.5%) identified as LGB. Youth who identified as heterosexual/straight in at least 1 wave and not as LGB in either wave were coded as heterosexual (95.5%; n = 3948).

**Peer Victimization/Bullying**

During each wave (except wave 5), students were asked whether they experienced specific forms of peer victimization (eg, name calling, threats of physical violence, actual physical violence) during the previous 12 months. During waves 1 to 4, respondents reported whether they experienced each form of peer victimization; during waves 6 and 7, respondents reported whether they experienced any form of bullying/victimization but were not asked which specific type(s) of victimization they experienced. For our first research question (on victimization trends across waves 1 to 7), peer victimization was operationalized as a dichotomous variable (0 = no forms of victimization experienced; 1 = some form(s) of victimization experienced). For our second research question (on victimization and emotional distress across waves 1 to 4), peer victimization was treated as a count variable, reflecting the number of forms of victimization reported (range: 0–3). Parents also reported whether their child was bullied through name calling in wave 1 (0 = no; 1 = yes).

**Emotional Distress Index**

During waves 2 and 4, youth were asked if they have recently been (1) feeling unhappy and depressed, (2) thinking of themselves as a worthless person, and (3) feeling reasonably happy all things considered. For the first 2 items, there were 4 possible responses: no not at all, no more than usual, rather more than usual, and much more than usual. For the item regarding happiness, the 4 possible responses were as follows: more so than usual, about the same as usual, less so than usual, and much less than usual. These 3 items had a Cronbach’s α of 0.74 and 0.75 at waves 2 and 4, respectively, and were thus averaged into a single scale at each wave. These scales were used for all analyses except those involving SEM (discussed below), where instead the latent construct of emotional distress was entered as a predictor of each of the 3 items at the respective wave. We used this latent-variable approach to more accurately capture the notion that these 3 observed items (each measured with error) emanate from a latent construct.

**Statistical Analyses**

**Hierarchical Linear Models**

To examine whether bullying rates decreased over time for LGB youth in absolute terms and relative to heterosexual peers, we used a 3-level hierarchical linear model (HLM) with a logit link function for dichotomous outcomes. Repeated observations (level 1) were nested within individuals (level 2), which were nested within design strata (level 3). The dependent variable in each model is whether the youth reported being bullied in the last year (0 = no; 1 = yes). Bullying/peer victimization was predicted by wave of data collection and cross-level interactions between wave and LGB identification; this piecewise growth specification allowed for greater flexibility in measuring wavespecific disparities rather than assuming a particular parametric growth function. Random intercepts at levels 2 and 3 accounted for random variation across individuals and across strata. SEs were cluster-robust and accounted for heteroskedasticity. Models were estimated with level 2 (ie, individual person level) indicators for LGB identification and gender, as well as interactions between LGB identification and gender. Each level 2 variable was interacted with level 1 indicators for wave (ie, cross-level interactions in the piecewise growth model). We also performed a robustness check: we estimated the HLMs separately by gender and obtained identical estimates and inferences.

**Propensity Score Matching With HLM**

To more rigorously test the relationship between LGB identification and victimization after secondary/high school, we used propensity score matching to identify a set of heterosexual-identified youth who reported the same levels of victimization and emotional distress as did LGB-identified youth during waves 1 to 4. The propensity score itself can be viewed as a composite measure of how different LGB and heterosexual youth are in terms of how much bullying they experienced in waves 1 to 4, in terms of emotional distress at waves 2 and 4, and in terms of parental reports of their child being bullied through name calling in wave 1. Before matching, LGB and heterosexual youth differed on the propensity score by 1.18 SD for boys and 1.15 SD for girls (each P < .0001). Matching is preferred to covariate adjustment when the difference in mean propensity scores exceeds 0.50 SD.
because covariate adjustment relies more heavily on functional form assumptions, and large extrapolations may be required. Through propensity score matching, we identified a sample of heterosexual-identified boys (girls) and LGB-identified boys (girls) with nearly identical victimization and emotional distress profiles in waves 1 to 4 and within the same sampling design strata, and we avoided having to make the stronger analytic assumptions required of standard covariate adjustment.

Then, using the matched sample of LGB- and heterosexual-identified boys (girls), we assessed differences in postsecondary/post-high school victimization. For these analyses, the wave 6 and 7 odds ratios (ORs) are of particular interest, as they tell us how LGB identification predicts subsequent bullying among the sample of youth who reported equivalent bullying and emotional distress during secondary/high school. To estimate the matched-sample ORs seen in Fig 2, we again used a 3-level HLM as discussed above.

**SEMs**

Next, we examined the associations among LGB identification status, bullying, and emotional distress using SEM analyses. In addition to providing a way to assess the robustness of the propensity score matching with HLM results (with emotional distress as the outcome), these SEMs disaggregate the total LGB–heterosexual disparities in emotional distress after the end of compulsory school into the direct paths (ie, disparities not accounted for by the models) and the indirect paths (ie, disparities mediated by previous victimization and emotional distress). Our SEMs account for the complex sampling design of the LSYPE by using probability-sampling weights and jackknifed SEs clustered at the design strata level.

**RESULTS**

**Victimization Trends for LGB- and Heterosexual-Identified Youth**

Peer victimization was highest on average during wave 1 (ie, year 9), and each group (gay/bisexual boys, heterosexual boys, lesbian/bisexual girls, heterosexual girls) experienced a significant reduction in victimization between waves 1 and 7 (each OR < .0001; Fig 1). For example, 57% of lesbian/bisexual girls reported being bullied at wave 1, whereas only 6% of these girls reported being bullied at wave 7. For gay/bisexual boys, the wave 1 and 7 percentages were 52% and 9%, respectively. Despite a significant reduction in the absolute percentage of gay/bisexual boys reporting being bullied, gay/bisexual boys became more likely to be bullied relative to heterosexual boys. Among boys, the wave 1 and 7 ORs were 1.78 ($\chi^2_1 = 6.49, P = .011$) and 3.95 ($\chi^2_1 = 10.67, P = .001$), respectively (Fig 2). The pattern of relative LB–heterosexual bullying among girls was markedly different: Among girls, the wave 1 OR was 1.95 ($\chi^2_1 = 11.18, P < .001$), whereas by wave 7, the OR decreased to 1.18 and became nonsignificant ($\chi^2_1 = 0.16, P = .689$). This gender × LGB identification interaction was not significant at wave 1 ($\chi^2_1 = 0.08, P = .773$), but became significant by wave 7 ($\chi^2_1 = 4.28, P = .039$).

Moreover, propensity score matched analyses revealed that when LGB boys (girls) were matched to heterosexual boys (girls) in terms of bullying in waves 1 to 4, parental reports of bullying through name calling at wave 1, and emotional distress at waves 2 and 4, the ORs at wave 7 were strikingly similar to the ORs in the unmatched/full samples (compare dashed and solid lines in Fig 2). In the matched sample, gay/bisexual boys were >4 times as likely as heterosexual boys to report being bullied at wave 7 (OR = 4.64, $\chi^2_1 = 23.41, P < .0001); 2.26 ($\chi^2_1 = 10.20, P = .001$), and 2.61 ($\chi^2_1 = 12.67, P = .001$), respectively.

To assess model fit with SEM, ideal fit statistics include ratio of $\chi^2$/df < 2, root mean square error of approximation (RMSEA) < 0.06, probability (RMSEA < .05) (pclose) > 0.95; comparative fit index (CFI) > 0.95; Tucker-Lewis index (TLI) > 0.95; and standardized root mean squared residual (SRMR) < 0.08. Our SEMs have excellent fit-statistic properties, meeting all of these fit-statistic standards (for the male model: $\chi^2(25) = 31.758$ (ratio = 1.27), RMSEA = 0.012, pclose = 1.000, CFI = 0.992, TLI = 0.981, SRMR = 0.016; for the female model: $\chi^2(25) = 42.497$ (ratio = 1.70), RMSEA = 0.018, pclose = 1.000, CFI = 0.987, TLI = 0.971, SRMR = 0.016).
This finding suggests that gay/bisexual boys were bullied more after secondary/high school even when compared with heterosexual boys who reported nearly identical victimization and emotional distress during secondary/high school.

Role of Victimization in Explaining LGB–Heterosexual Emotional Distress Disparities

In England, compulsory schooling concludes in year 11 (ie, wave 3). One year after the end of compulsory schooling (ie, wave 4), LGB-identified youth demonstrated significantly higher levels of emotional distress risk than did their heterosexual-identified peers (in the male model: $b = 0.17$, $SE = 0.05$, 95% confidence interval [CI] = 0.08–0.27, $P = .002$; in the female model: $b = 0.24$, $SE = 0.07$, 95% CI = 0.10–0.39, $P = .001$). These disparities can be decomposed into direct paths (ie, the portion of each disparity not explained by previous victimization and emotional distress) and indirect paths (ie, the portion of each disparity mediated by previous victimization and emotional distress), illustrated in the SEM diagrams (Fig 3). For boys, more than half (54%) of the LGB–heterosexual disparity in emotional distress at wave 4 was explained by indirect paths ($b = 0.09$, $SE = 0.04$, 95% CI = 0.02–0.16, $P = .015$); these indirect paths can be decomposed further into the portions of the disparity mediated by previous victimization (25% of the total disparity; $b = 0.04$, $SE = 0.02$, 95% CI = 0.01–0.07, $P = .009$) and previous emotional distress (29%; $b = 0.05$, $SE = 0.03$, 95% CI = −0.01 to 0.11, $P = .120$). For girls, again about half (46%) of the disparity was mediated by indirect paths ($b = 0.11$, $SE = 0.03$, 95% CI = 0.06–0.16, $P < .001$); decomposing these indirect paths further, 28% of the total disparity was mediated by previous victimization ($b = 0.07$, $SE = 0.02$, 95% CI = 0.03–0.11, $P < .001$) and 18% was mediated by previous emotional distress ($b = 0.04$, $SE = 0.01$, 95% CI = 0.02–0.07, $P < .001$).

Although about half of each disparity was mediated by previous victimization and emotional distress, disparities persisted independent of these factors (male model: $b = 0.08$, $SE = 0.03$, 95% CI = 0.02–0.13, $P = .009$; female model: $b = 0.13$, $SE = 0.07$, 95% CI = 0.00–0.26, $P = .047$). This result is shown in the direct paths from LGB to wave 4 emotional distress in Fig 3. To assess the robustness of our findings, we performed
**Figure 3**

SEMs modeling the relationships among bullying victimization, emotional distress, and LGB identification by gender. Models were estimated via the asymptotic distribution free method with jackknifed SEs clustered at the stratum level. Sampling weights were used to ensure the results are nationally representative. *P* values (rounded to 3 decimal places) appear in parentheses below unstandardized path coefficients. Bully# w1, count of forms of bullying reported in wave 1; Bully# w2, count for wave 2; and so on. Em Dis w2, latent construct of emotional distress at wave 2; Em Dis w4, corresponding variable for wave 4.
additional types of analyses, all of which suggested the same patterns. First, similar patterns emerged when the emotional distress index was treated as observed (rather than latent). Second, analyses using propensity score matching instead of SEM produced comparable patterns and results. These additional analyses suggest the findings are robust to alternative (and conceptually distinct) analytic strategies.

**DISCUSSION**

This research contributes the first longitudinal evidence on 2 important, developmental questions related to peer victimization and the emotional distress of LGB youth. The first contribution concerns peer victimization trends. As hypothesized, our findings indicate that bullying decreased in absolute terms after secondary/high school regardless of gender or sexual identity. In relative terms, LGB boys and girls were about twice as likely as heterosexual peers to be bullied throughout secondary/high school; however, after secondary/high school, lesbian/bisexual girls were no more likely to be bullied than heterosexual girls, whereas gay/bisexual boys’ likelihood of being bullied actually increased compared with heterosexual boys. Thus, as we hypothesized, our findings suggest that the answer to “does it get better?” is highly nuanced when it comes to victimization, depending on whether one looks at absolute or relative levels of victimization and on the interplay among age, gender, and sexual identity. The second contribution of this research is on the role of victimization in explaining LGB–heterosexual emotional distress disparities. As predicted, we found that the higher levels of peer victimization that LGB youth experienced throughout secondary/high school mediated about half, but not all, of the LGB–heterosexual disparities in emotional distress. These conclusions should be treated with some caution, however, because these data do have limitations, they are self-reported, only capture LGB identification (not behavior or attraction), do not assess the degree to which youth were “out,” and may not generalize to other countries.

In terms of policy implications, these findings suggest that addressing both emotional distress and victimization during secondary/high school may help to substantially reduce LGB–heterosexual disparities in later emotional distress. However, other support, such as altering school climate in regard to LGB issues, may also be necessary to foster supportive and safe environments for LGB youth. Climate-altering programs may include diversity training on students raised by nonheterosexual parents, discussions of same-gender relationships in sex education courses, teacher/staff training on how to address LGB harassment, open dialogues about homophobia in athletics programs and physical education classes, gay-straight alliances, and incorporating LGB issues into curricula. Perhaps by reducing both the victimization LGB youth experience and the stigma associated with LGB identification, we can substantially reduce LGB–heterosexual disparities in emotional distress and victimization as youth enter adulthood.

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**REFERENCES**

10. Espelage DL, Aragon SR, Birkett M, Koenig BW. Homophobic teasing, psychological...


27. California Safe Schools Coalition and 4-H Center for Youth Development, University of California, Davis. Consequences of Harassment Based on Actual or Perceived Sexual Orientation and Gender Non-Conformity and Steps for Making Schools Safer. San Francisco, California: California Safe Schools Coalition: 2004


35. Bradshaw CP, Waasdorp TE, O’Brennan L, Guilemetova M. Findings from the National Education Association’s Nationwide Study of Bullying: Teachers’ and Staff Members’ Perspectives on Bullying and Prevention. Washington, DC: National Education Association; 2011

36. Barber H, Krane V. Creating a positive climate for lesbian, gay, bisexual, and transgender youths. JOPERD. 2007;78(7):6–7, 52


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