Examining School Security Measures as Moderators of the Association Between Homophobic Victimization and School Avoidance

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Abstract

Homophobic victimization is a pervasive problem in U.S. schools that leads to negative outcomes for students. Those who experience homophobic victimization are at greater risk for avoiding particular spaces in school because they feel unsafe or afraid. Visible school security measures (e.g., security guards, metal detectors, and cameras) offer spatial guardianship that may reduce students' place-specific avoidance behaviors. To test this moderating effect of school security, we analyzed data from six panels of the School Crime Supplement to the National Crime Victimization Survey (N = 41,229). Logistic regression models were used to examine the moderating effect of three types of school security measures on the association between homophobic victimization and avoidance of six specific locations in school and overall fear of victimization at school. Results suggest that visible security measures did not meaningfully moderate the association between homophobic victimization and school avoidance.

KEYWORDS fear of victimization, homophobic victimization, school avoidance, school security

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In schools across the United States, many youth are targets of verbal and physical victimization because of their real or perceived sexual or gender minority status (i.e., lesbian, gay, bisexual, queer, or transgender). Such victimization (sometimes called homophobic or transphobic victimization) has received increased attention in the popular media and academic literature given its association with a variety of negative academic, behavioral, and mental health outcomes (e.g., Bontempo & D'Augelli, 2002; D'Augelli, Pilkington, & Hershberger, 2002; Goldbach, Tanner-Smith, Bagwell, & Dunlap, 2014; Varjas et al., 2008). One troubling consequence of homophobic (and transphobic) victimization is increased fear of victimization at school and the avoidance of certain parts of the school building due to discomfort or fear (e.g., Kosciw, Greytak, Palmer, & Boesen, 2014). Although school avoidance behaviors can promote perceived safety by reducing the likelihood of interactions between potential victims and offenders, fear of victimization at school and school avoidance are correlated with negative academic outcomes, such as lower achievement and attendance (Eaton et al., 2012; Lacoe, 2012). Given the correlation between homophobic victimization and school avoidance behaviors, an important question is whether any school policies or procedures might mitigate that relationship. Visible school security measures (e.g., security guards, metal detectors, and cameras) are spatially located interventions that can offer surveillance in places where students may feel vulnerable, and therefore might be one type of school policy that could mitigate the associations between homophobic victimization and school avoidance. Therefore, the goals of the current study are to examine the associations between verbal homophobic victimization and school avoidance behaviors, and to explore whether certain school security measures moderate those

associations.

Homophobic victimization, defined here as being the target of negative words or actions because of one's real or perceived sexual orientation, is among the most socially acceptable types of hate-related victimization among youth (Steinberg, Brooks, & Remtulla, 2003). Verbal victimization is one of the most common forms of homophobic victimization (Kosciw et al., 2014). Although verbal victimization may seem mild in comparison to other forms of victimization, it can have negative consequences for students regardless of their sexual orientation (Swearer, Turner, Givens, & Pollack, 2008). Additionally, it is important to note that in practice, homophobic victimization is easily conflated with victimization based on gender nonconformity (Swearer et al., 2008; Young & Sweeting, 2004). Although this is a meaningful distinction, the extent of the overlap between them is such that they are difficult to disentangle. In the current study, we do not attempt to differentiate among the reasons for experiencing homophobic victimization, but recognize that there may be multiple antecedents to students' experiences of such victimization.

Homophobic victimization and School Avoidance

Although experiencing homophobic victimization is not contingent on actually identifying as a sexual minority, sexual and gender minority youth experience higher levels of homophobic victimization than their peers (Espelage, Aragon, & Birkett, 2008). Homophobic victimization is associated with numerous detrimental consequences including the avoidance of school and certain locations within school (Darwich, Hymel, & Waterhouse, 2012; Kosciw et al., 2014). Across all adolescents in the U.S., approximately 6% of students in Grades 9-12 reported skipping school at least once in the past 30 days because they felt unsafe at or on the way to school (Eaton et al., 2012). Yet, sexual and gender minority students skipped school in the past

month at a much higher rate, whether they experienced low (17%) or high (61%) levels of victimization (Kosciw et al., 2014). Moreover, there were certain spaces within schools (e.g., locker rooms) that sexual and gender minority youth avoided because they felt unsafe or uncomfortable. Such avoidance behaviors indicate a clear spatial element to perceptions of safety at school; sexual and gender minority youth may perceive specific physical spaces in schools as unsafe, and thus avoid those places. Although school avoidance behaviors may promote feelings of safety by reducing the likelihood of interaction between potential victims and offenders, they also have detrimental effects on attendance and academic performance (Bowen & Bowen, 1999; Eaton et al., 2012; Lacoe, 2012; Milam, Furr-Holden, & Leaf, 2010).

Homophobic victimization can also have negative consequences for nonsexual or gender minority youth who may be victimized due to their perceived sexual minority status. For example, in a recent study of public school students in Wisconsin, Poteat and colleagues (2011) found that among heterosexual students, homophobic victimization was associated with higher suicidality, lower levels of school belonging, and worse academic outcomes in terms of truancy, grades, and the perceived importance of graduating, even after controlling for general victimization (i.e., not based on sexual orientation) experiences. Although heterosexual students experience less homophobic victimization than sexual minority students, students' self-identified sexual orientation matters little in the effect of these victimization experiences on perceptions of school climate (Espelage, Aragon, & Birkett, 2008). This indicates that on average students who experience homophobic victimization report a poorer school climate, and their actual sexual orientation has only a small effect on this association. Thus, homophobic victimization is likely consequential for youth regardless of their sexual orientation.

School-level policies, interventions, and climate characteristics such as gay-straight

alliances, inclusive curricula, positive relationships with adults, and consistently enforced antibullying policies have been linked with reduced homophobic victimization and improved outcomes among those who have experienced such victimization (Chesir-Teran & Hughes, 2009; Goodenow, Szalacha, & Westheimer, 2006; Kosciw, Palmer, Kull, & Greytak, 2013; McGuire, Anderson, Toomey, & Russell, 2010; Szalacha, 2003). Despite evidence that these school-level factors can mitigate the negative effects associated with homophobic victimization, few studies have explicitly focused on school-level interventions that address the spatial component of school avoidance behaviors. Visible school security measures, defined broadly here as any visible surveillance mechanism designed to limit access to school buildings, limit weapons on campus, increase student surveillance, or provide a means for reacting to crises (Addington, 2009), can be conceptualized as one type of school-level intervention that is inherently spatial in nature. School security measures are designed, in part, to observe places where school personnel cannot regularly conduct surveillance. For example, security cameras constantly monitor hallways or stairwells when it would be difficult for adults to do so. Metal detectors can identify objects inside pockets and jackets that might be otherwise unnoticed. Security guards freely roam the halls without the responsibility of teaching classes or holding office hours. An implicit role of these security measures, therefore, is to provide support in places where students might otherwise be inadequately supported.

Nevertheless, some suggest that school security measures act as an additional surveillance tool of those in power, thereby allowing increased policing of students and the criminalization of student behaviors—particularly those of students of color (Hirschfield, 2008; Kupchik & Monahan, 2006). School security measures, therefore, may be interpreted as a tool for excluding certain students for a variety of reasons (Kupchik, 2010). On one hand, there is a

well-documented trend of adults in school playing an important role in the well-being of sexual and gender minority students (e.g., Russell, Seif, & Truong, 2001). Students who have supportive relationships with adults in school tend to have better outcomes than those who do not. On the other hand, adults in school may not serve as agents of protection for sexual or gender minority students; nonsupportive adults in school may sometimes be complicit in bringing about disproportionately negative outcomes for sexual and gender minority students (Walters & Hayes, 1998). For example, sexual minority students are more likely to be expelled from school and experience formal criminal justice sanctions outside of school than their peers (Himmelstein & Bruckner, 2011; Mitchum & Moodie-Mills, 2014). Additionally, homophobic attitudes toward victims may lead to greater social acceptance of homophobic victimization among youth (Steinberg, Brooks, & Remtulla, 2003). Because visible security measures are controlled by adults in school, they may not provide an added sense of guardianship, particularly in schools where sexual and gender minority students are unable to trust the adults. On the contrary, providing adults with extra power via visible security measures would likely make students who experience homophobic victimization feel less safe and avoid more places in school rather than offer an added sense of protection.

One theoretical framework that is useful in conceptualizing the possible role of school security measures in mitigating the association between homophobic victimization and school avoidance behaviors is the routine activity theory of criminal victimization (Cohen & Felson, 1979). Routine activity theory seeks to explain criminal victimization by examining the social structures within which victimization takes place. This theory suggests that the likelihood of criminal offending and victimization depends on the convergence in space and time of three elements: a motivated offender, a suitable target, and the absence of capable guardians. The ways

in which institutions and activities are structured lead to variation in the extent to which each of these three elements is present. In schools, the structure of the school and its daily routines may foster places and times where victimization is more likely to occur due to a confluence of motivated offenders, suitable targets, and lack of capable guardianship. For instance, some spaces in school may be characterized by a high concentration of interactions between potential offenders and victims (e.g., busy hallways between classes, cafeteria) and other spaces may be characterized by low levels of guardianship (e.g., bathrooms, parking lots). School security measures like security cameras, metal detectors, and security guards visibly increase the surveillance of schools. Accordingly, they may increase the sense of guardianship in certain spaces of school that might otherwise be perceived as risky, particularly for students who have previously been victimized at school. Thus, the association between homophobic victimization and school avoidance behaviors may be smaller in schools that employ security measures like guards, metal detectors, or cameras.

Alternatively, social disorganization theory suggests that increased school security might lead to increased victimization and fear of victimization at school. In their early research on neighborhood crime, Shaw and McKay (1942) found that structural characteristics of neighborhoods such as physical and social disorder were consistently associated with higher rates of delinquency. They suggested that the level of disorder acts as a cue for what sorts of behavior are appropriate in a given space; a greater level of disorder signals a greater tolerance for delinquent behaviors. Visible security measures such as surveillance cameras have been posited as indicators of physical disorder in both neighborhoods and schools (e.g., Randa & Wilcox, 2010; Sampson & Raudenbush, 2004). Therefore, increased school security may not function solely as perceived protection, but possibly as a sign of perceived disorder.

Prior Research

To our knowledge, there have been no experiments that have attempted to assess the impact of school security measures on student behavioral outcomes. The few existing quasi-experiments have focused on the effects of police presence in schools but not other types of visible school security measures. Results from these quasi-experimental studies are inconsistent; whereas some report that the presence of school resource officers is associated with a lower rate of suspensions for violent behaviors (e.g., Link, 2010; Rich-Shea, 2010; Wilkerson, 2001) others report findings in the opposite direction (e.g., Barnes, 2008; Johnson, 1999; Theriot, 2009). A recent meta-analysis (Fisher & Fisher, 2014) suggests that the presence of school resource officers (i.e., sworn police officers assigned to a school) is associated with a small increase in school disciplinary incidents such as school suspensions or arrests. However, it is still unclear whether police are placed in schools that already have high rates of discipline, or whether the introduction of police has led to an increase in discipline. Schools may have the same rates of problem behaviors regardless of security measures in place, but having police roaming the halls may lead to higher rates of detection. Such an effect would be indicative of higher rates of discipline, but not necessarily higher rates of problem behaviors.

There is also a limited amount of empirical literature examining the associations between homophobic victimization, school avoidance behaviors, and school security measures. Although there is consistent evidence that sexual and gender minority students who experience homophobic victimization skip school and classes at a higher rate than their peers (Bontempo & D'Augelli, 2002; Darwich et al., 2012; Kosciw et al. 2014), less is known about whether homophobic victimization is associated with the avoidance of specific spaces within schools. Using data from a national sample of 8,584 sexual and gender minority students between ages 13

and 20, Kosciw and colleagues (2014) found that many youth avoided specific places within the school building due to perceived lack of safety, including locker rooms (35%), bathrooms (35%), physical education or gym classes (32%), athletic fields or facilities (21%), the cafeteria or lunch room (20%), hallways (13%), school grounds (e.g., parking lots; 9%), and other spaces (4%). However, prior research has not explicitly examined the effect of homophobic victimization on specific school avoidance behaviors, nor whether those avoidance behaviors varied according to schools' security measures.

Furthermore, to date we are unaware of any studies that have examined whether visible security measures are associated with homophobic victimization, or whether security measures moderate the association between homophobic victimization and school avoidance. Several studies have examined the link between security measures, perceived school safety, and school-based victimization more generally (but not homophobic victimization more specifically), but the evidence is again inconsistent. Whereas some studies suggest visible security measures are associated with greater perceived safety at school, less frequent place-based avoidance behaviors in school, and reductions in student problem behaviors (Brown, 2005; Finn & McDevitt, 2005; Johnson, 1999; Randa & Wilcox, 2010), others indicate that visible security measures are associated with higher rates of delinquency and decreased feelings of safety (Goldstein, Young, & Boyd, 2008; Mayer & Leone, 1999). Thus, there is a notable lack of research on the associations between homophobic victimization, school avoidance, and school security measures.

The Present Study

In an attempt to address gaps in the literature this study examined U.S. middle- and high-school students' experiences of homophobic victimization, their school avoidance behaviors, and

whether visible school security measures (i.e., security cameras, guards, and metal detectors) affect that association. School security measures are one malleable environmental factor that school administrators could potentially manipulate to promote perceived school safety for students who have experienced homophobic victimization. Because extant empirical research and theoretical frameworks provide inconsistent guidance on the associations among these variables, we chose not to use directional hypotheses for our study, but to address the following research question: Does the presence of security guards, security cameras, or metal detectors moderate the associations between homophobic victimization and avoidance of specific physical spaces at school?

Method

Sample

This study used six panels of cross-sectional data (1999, 2001, 2003, 2005, 2007, and 2009) from the School Crime Supplement (SCS) to the National Crime Victimization Survey (NCVS). The United States Census Bureau for the Bureau of Justice Statistics and National Center for Education Statistics collected the SCS data (United States Department of Justice, 2009). All SCS data are publicly available online at the University of Michigan's Inter-university Consortium for Political and Social Research. In each survey year, students from a cross-sectional stratified random sample of U.S. households completed the SCS surveys. Because the SCS surveys are cross-sectional, longitudinal analyses were not possible. Although it is possible for the same student to have been interviewed across multiple data collection periods, the national sampling frame of the SCS surveys means that the statistical probability of such overlap is small and the de-identified nature of the SCS data structure makes it impossible to discern whether the same students were surveyed in multiple years. Similarly, the SCS data do not

include school identifiers for each student, so it is impossible to ascertain whether students in the samples were clustered within schools. This is an acknowledged limitation of the SCS data (particularly when examining school-level characteristics, as in the current study), but again, the national sampling frame of the surveys means there is only a small probability of such within-school clustering in the data. Therefore, for this study, responses from each SCS survey year were compiled into a single dataset (N = 41,229) and all analyses controlled for survey year. The compilation of survey responses across multiple years was designed to increase variability in the key measures of interest that have relatively low base rates (e.g., homophobic victimization). Eligible students were 12- to 18-year-olds enrolled in school at any point within the past six months before taking the survey.

Measures

The dependent variables of interest in this study were measures of school avoidance and fear of victimization at school. Avoidance behaviors were measured with six dichotomous items related to the avoidance of school entryways, hallways, cafeterias, bathrooms, parking lots, and classrooms. Students answered the following question about each of these locations: “During this school year, did you ever stay away from any of the following places because you thought someone might harm you there?” We also calculated a combined avoidance measure, where responses to each of these spatial avoidance questions were summed into a single measure ranging from 0 to 6. Finally, one item was used to measure students’ overall fear of being victimized at school: “How often are you afraid that someone will harm you in the school building/property?” with four possible responses (1 = *neve*r, 2 = *almost never*, 3 = *sometimes*c 4 = *most of the time*).

The key independent variables were homophobic victimization and visible school

security measures. Homophobic victimization was measured by a dichotomous response to the question: “During the last 6 months, has anyone called you a derogatory or bad name at school having to do with your sexual orientation?” The presence of visible security measures was measured with three dichotomous student-reported items for: (a) metal detectors, (b) one or more security cameras to monitor the school, and (c) security guards and/or assigned police officers. We did not compile these three security measures into a single combined score because we were not confident in the assumption that the three school security measures would relate to homophobic victimization and school avoidance behaviors in the same direction or magnitude. We were instead interested in isolating the effects of each of the three types of school security measures.

To control for potential confounds, student, household, school, and study level variables from the NCVS and SCS were included as covariates in the analyses. These variables were selected to control for demographic factors and other variables theoretically related to our key variables of homophobic victimization, school avoidance, and visible school security measures (e.g., Hale, 1996; Kosciw et al., 2014; Poteat, Mereish, DiGiovanni, & Koenig, 2011). Student control variables were: age (in years), sex (male or female), Hispanic ethnicity (yes or no), race (White or other), Grade (6-12), self-reported grades (mostly A’s – mostly F’s), number of days skipped class in the past month (0-20), and number of fights at school in the past month (1-100). Household control variables were: parental education (never attended – doctoral degree), marital status (married or not), income (in dollars), presence of a phone in the home (yes or no), urban area of residence (yes or no), region (Northeast, Midwest, South, West), and single female-headed household (yes or no). School control variables were: school type (private, public, other), student perceived availability of drugs and alcohol at school (alcohol, marijuana, crack, cocaine,

hallucinogens, PCP, heroin, over-the-counter pills, or other drugs), and whether student ever brought a gun to school (yes or no). Finally, study method control variables were: whether there was an adult present during interview (yes or no) and year of interview. Again, we used this set of control variables in an attempt to control for background characteristics that may have been confounded with any of the key measures of interest; nonetheless, sensitivity analyses that omitted all covariate controls yielded substantively similar findings.

Analytic Strategy

Because several of the variables of interest contained missing data (ranging from 1-32% missing), we used multiple imputation to allow for analysis of complete data for all students in the SCS sample. Multiple imputation provides unbiased estimates that are always at least as good as those based on other procedures such as listwise or pairwise deletion (Allison, 2000; Graham, 2009, 2012; Schafer & Graham, 2002). We generated 50 imputed data sets based on information from all key variables of interest as well as auxiliary variables that have been established as important correlates of one or more of the key constructs examined in this study and were included as covariates in the final analyses. Pooled estimates and inferential statistics were calculated by pooling results across the 50 datasets using Rubin's (1987) rules. Logistic regression models were used to predict the odds ratios (OR) of the six binary outcomes. Negative binomial regression models were used to predict the incident rate ratios (IRR) of the combined avoidance outcome measure. Ordinal logistic regression models were used to predict the OR of the ordinal outcome, fear of victimization at school. We first estimated models predicting the main effects of homophobic victimization and school security measures on the odds of school avoidance and fear of victimization at school. To examine the potential moderating effect of school security measures, we then included multiplicative interaction terms between homophobic

victimization and each type of school security measure (i.e., security guards, cameras, and metal detectors) in the models. All analyses used Taylor series variance estimates to adjust for the complex survey design of the SCS.

Results

Table 1 presents descriptive statistics for the weighted, nonimputed sample of students across all waves of the survey. Students ranged from 12 to 18 years-old, with an average age of 14.8 (*SD* = 1.9. Slightly more than half of the students were male (51.3%) and most were White (77.4%). Additionally, 1.0% reported experiencing homophobic victimization. Security guards (66.4%) and cameras (64.6%) were more common in students' schools than metal detectors (10.4%). Self-reported school avoidance behaviors ranged from 0.6% to 2.1% in the sample, with bathrooms (2.1%) and hallways (2.1%) being the most commonly avoided places, followed by cafeterias (1.5%), parking lots (1.4%), entryways (1.1%) and classrooms (0.6%). Results from the combined avoidance measure indicated that 5.2% of students reported avoiding any of these six places in the school due to fear from harm. However, 19.6% of the sample reported fearing victimization at school, a much larger proportion than those who avoided certain places in school.

Before exploring associations among multiple variables, we examined bivariate correlations between the key variables (Table 2). Because all variables were binary or ordinal, we intended to estimate phi coefficients. However, because the variables of interest had extremely skewed distributions, the phi coefficient was not interpretable. Therefore, we estimated tetrachoric and polychoric correlations, which are appropriate for binary and ordinal variables and can be interpreted similar to Pearson correlation coefficients. These polychoric correlations are shown in Table 2. Homophobic victimization was correlated most highly with

the following dependent variables: avoiding classrooms (r = .37, SE = 0.05), cafeterias (r = .36, SE = 0.04), avoiding anywhere (r = .35, SE = 0.03), and fear of victimization at school (r = .30, SE < 0.01). Schools that employed one type of visible security measure often also used another; intercorrelations between types of security measures ranged from .30 to .48. The largest correlations between security measures and avoidance behaviors were between metal detectors and avoiding entryways (r = .17, SE = 0.03) and security guards and avoiding hallways (r = .13, SE = 0.02), parking lots (r = .12, SE = 0.02), bathrooms (r = .12, SE = 0.02), and anywhere (r = .12, SE = 0.01).

To examine the associations between homophobic victimization, visible security measures, and school avoidance behaviors, we conducted a series of logistic regressions using homophobic victimization and the presence of visible security measures to predict each type of school avoidance behavior, controlling for all of the background student, family, school, and context covariates outlined in the methods section. Table 3 presents results from these models in the form of odds ratios (OR, i.e., exp(b)) and their corresponding 95% confidence intervals. As shown in the first row of Table 3, homophobic victimization was associated with significantly higher odds than nonvictimized youth of avoiding each area of the school, including the *entry*, OR = 3.12, p < .001, 95% CI [1.81, 5.37]; *hallways*, OR = 3.86, p < .001, 95% CI [2.65, 5.63]; *cafeterias*, OR = 5.64, p < .001, 95% CI [3.85, 8.26]; *bathrooms*, OR = 3.86, p < .001, 95% CI [2.63, 5.65]; *parking lot*, OR = 3.10, p < .001, 95% CI [1.91, 5.03]; and *classrooms*, OR = 6.27, p < .001, 95% CI [3.76, 10.46]. Additionally, students who reported homophobic victimization had significantly higher odds of overall fear of victimization at school compared to students who reported no such victimization, OR = 3.62, p < .001, 95% CI [2.93, 4.47]. Findings for the combined avoidance measure were similar, such that homophobic victimization was positively

associated with the incidence rate of school avoidance behaviors, IRR = 4.60, $p < .001$, 95% CI [3.02, 6.99]. Thus, homophobic victimization was associated with increased spatial avoidance behavior in many parts of the school building and heightened levels of fear of victimization at school.

Table 3 also shows that security guards, metal detectors, and security cameras were associated with higher odds of fear of victimization at school or specific spatial school avoidance behaviors, but those associations varied across physical spaces at school. Specifically, all three visible security measures were associated with greater odds of fear of victimization at school, whereas only security guards and metal detectors were associated with specific spatial avoidance behaviors. For instance, students in schools with security guards had significantly higher odds of *avoiding hallways*, OR = 1.37, $p = .001$, 95% CI [1.14, 1.63]; the *cafeteria*, OR = 1.28, $p = .019$, 95% CI [1.04, 1.58]; *bathrooms*, OR = 1.39, $p < .001$, 95% CI [1.17, 1.66]; *parking lots*, OR = 1.47, $p < .001$, 95% CI [1.18, 1.81]; and *fear of victimization at school*, OR = 1.20, $p < .001$, 95% CI [1.13, 1.28]. However, there was no evidence that students in schools with security guards had higher/lower odds of avoiding school entryways, the cafeteria, or classrooms. Conversely, the presence of metal detectors was associated with higher odds of avoiding *school entries*, OR = 1.60, $p < .001$, 95% CI [1.26, 2.04]; *hallways*, OR = 1.27, $p = .021$, 95% CI [1.04, 1.55]; the *cafeteria*, OR = 1.49, $p = .001$, 95% CI [1.18, 1.88]; *bathrooms*, OR = 1.27, $p = .020$, 95% CI [1.04, 1.56]; and *fear of victimization at school*, OR = 1.36, $p < .001$, 95% CI [1.25, 1.47]; whereas it was not associated with *avoiding parking lots or classrooms*. Security cameras were associated with higher odds of *fear of victimization at school*, OR = 1.14, $p < .001$, 95% CI [1.06, 1.22], but not any single spatial avoidance behavior. These same general patterns held true when predicting the combined avoidance measure—the *presence of guards*, IRR = 1.34, $p <$

.001, 95% CI [1.18, 1.52], and *metal detectors*, IRR = 1.33, p = .001, 95% CI [1.13, 1.57], were significant predictors of school avoidance incidence rates, but the *presence of cameras* was not, IRR = 1.07, p = .281, 95% CI [0.94, 1.23].

To address the primary objectives of the study, we next examined whether the presence of school security measures moderated the effect of homophobic victimization on students' school avoidance and perceived school safety. Table 4 presents results from logistic regression models predicting school avoidance behaviors that also included multiplicative interaction terms between homophobic victimization and each of the visible security measures. There were no significant multiplicative interaction terms in these models, providing no evidence of moderation. Therefore, the results provide no evidence that visible security measures moderated the association between students' homophobic victimization and subsequent school avoidance behaviors and fear of victimization at school.

Discussion

This study examined the associations between homophobic victimization and school fear and avoidance behaviors, as well as the ability of school security measures to moderate these associations. We used regression models to estimate these associations using student responses to questions from six waves of the School Crime Supplement to the National Crime Victimization Survey. Results indicated that homophobic victimization and the presence of security measures were associated with higher odds of being afraid at school and avoiding certain places at school. These findings support previous research that has linked homophobic victimization with school avoidance behaviors (Darwich et al., 2012; Kosciw et al., 2014). Results from the current study provided no evidence that school security measures buffered the association between homophobic victimization and school fear and avoidance. Thus, overall

findings provided no evidence that visible school security measures led to any extra sense of safety for students who experienced homophobic victimization when compared to those who did not.

One possible explanation for the lack of a moderating effect of school security measures is that students may not perceive school security measures to be capable guardians (per routine activities theory); Cohen and Felson (1979) suggested that the absence of *capable* guardians was a necessary component for the occurrence of interpersonal victimization. Perhaps students are likely to avoid specific spaces in schools, regardless of the school's security measures, because they do not believe those school security measures offer protection from interpersonal victimization. This is consistent with how school security measures are often used in schools. Security guards (particularly school resource officers) are typically instructed to only intervene in situations where laws—not just school policies—have been violated; metal detectors will only detect metal objects, not interpersonal victimization; and conduct control is only one possible function of security cameras, which vary in use from place to place (Hope, 2009; Muller & Boos, 2004). Additionally, if students who experience homophobic victimization view school security measures as an extension of an untrusted school administration, they might be less likely to perceive the security measures as capable guardians. So, although school security measures might serve these other purposes, findings from the current study suggest they may not provide students a greater overall sense of safety in school on average. It is possible that, consistent with social disorganization theory, security measures may have been placed in schools that already contained a certain amount of social disorder, including the presence of homophobic victimization; however, we were unable to detect any change in the associations between school security measures, homophobic victimization, and school avoidance behaviors over time because

of the cross-sectional nature of the data.

A related consideration specific to security guards is that they may not be adequately trained to address homophobic victimization and offer appropriate assistance to students who experience it. There are documented cases of students experiencing homophobic victimization in the presence of school personnel who never intervened (e.g., Jane Doe, 2012). Security guards who are trained to appropriately respond to issues pertaining to homophobic victimization may be more effective in decreasing its incidence and negative effects. As such, prior researchers have recommended appropriate training for school personnel to create more positive school experiences for sexual and gender minority youth (Russell, Kosciw, Horn, & Saewyc, 2010). We are unaware of any prior research that has examined the effectiveness of school security guard training in improving student outcomes related to experiences of homophobic victimization; this is an important direction for future research.

Neither security guards, metal detectors, nor security cameras were effective in mitigating the associations between homophobic victimization and school avoidance behaviors or overall fear of victimization at school, indicating that these security measures may not help students who have experienced homophobic victimization feel safer at school in general, or in particular places within the building. However, these visible security measures did not exacerbate these associations either. Students who experience homophobic victimization are an especially vulnerable population (Goodenow, Szalacha, & Westheimer, 2006), and may need help navigating environments that cause them to be afraid and fear for their own safety (Kosciw et al., 2014). Findings from the current study suggest that school security guards, metal detectors, and security cameras may not be effective in performing this role.

In light of these results, it may be useful for schools to explore other ways to protect their

most vulnerable students, particularly those with a real or perceived sexual or gender minority status. Research with sexual and gender minority populations suggests that interventions such as the presence of gay-straight alliances, LGBT-inclusive curricula, anti-bullying policies that include explicit language protecting LGBT students, and supportive relationships with adults at school may help improve academic, behavioral and mental health outcomes (Chesir-Teran & Hughes, 2009; Goodenow et al., 2006; Kosciw et al., 2013; McGuire et al., 2010). Unfortunately, the SCS does not measure many of these variables, so we were unable to control for or examine these factors. The SCS does include several items about students' relationships with adults, but there were large amounts of missing data on these measures when pooling the survey waves and were thus not included in our analyses. Further research on the ability of these school level characteristics to moderate the association between homophobic victimization and school fear and avoidance behaviors is necessary, and could be useful for shaping future interventions. In particular, examining the degree to which students trust adults and agree with school disciplinary practices may help to disentangle these complicated relationships, particularly when adults are complicit in making sexual and gender minority students feel less safe at school out of fear of being unjustly targeted or punished.

Because this study involved secondary analyses of existing data, we were limited by the data available in other ways as well. For instance, sexual orientation was not measured in the SCS, so we have no way of knowing the sexual orientation of any of the respondents in the sample. The lack of such an item necessitated the assumption that when students were asked about their experiences of homophobic victimization, they interpreted the question has having to do with their non-heterosexual sexual orientation. However, homophobic victimization is not restricted to sexual minority students; heterosexual students may also experience homophobic

victimization, and gender minority students experience high rates of homophobic victimization regardless of their sexual orientation (Swearer et al., 2008). Although the subjective experience of homophobic victimization may differ depending on one's self-identified sexual orientation, prior research indicates that it has negative effects regardless of sexual orientation (Poteat et al., 2011). Nonetheless, the effects of such victimization may differ depending on students' self-identified sexual identity. Additionally, a single item measure of homophobic victimization does not adequately capture all of the nuances and variations of how homophobic victimization may manifest itself; the item used in this study captured only incidents of verbal victimization, not physical or sexual victimization. Meaningful differences in school avoidance behaviors may be present in populations who experience homophobic victimization that is physical in nature, and thus this is an important area for future research. Future research should also explore the role of visible school security measures in the association between multiple types of homophobic victimization and school avoidance behaviors, with increased sensitivity to issues of students' self-reported sexual orientation.

Another limitation of this study is that it relies on student-reports of the presence of security measures. There is evidence that students and administrators report the presence of various types of school security measures differentially (Fisher, Steinka-Fry, Tanner-Smith, & Lipsey, 2014). Students may not realize, for example, that security officers are present in school, especially if they are not in uniform. Or, perhaps the presence of security cameras has become such a normalized part of the school environment that students do not recognize them and report their presence in a survey like the SCS. Even though students might not provide the most accurate reports of the presence of security measures, their reports may still be very meaningful. Students report their subjective experiences of their school; if security measures do not register

with them as part of that experience, these measures may not influence their self-reported behaviors either. It is also possible that the effects of school security measures could be bimodal, providing a protective effect for some students and a detrimental effect for others. Such disparate response patterns could therefore wash each other out, which is always a risk when using a variable-centered analysis approach; future studies using person-centered analyses would be useful in assessing this possibility. Finally, due to data limitations, we also only analyzed whether school security measures were present anywhere in the school (the SCS did not include questions regarding the presence of security measures in specific school locations). Future research might explore whether the actual placement of school security measures in particular parts of the building has an impact on spatial avoidance behaviors.

Although funding for school security measures have continued to increase in recent years, the results of this study do not support the stance that these measures will help mitigate the detrimental effects of homophobic victimization on school avoidance behaviors. Further research is needed to more fully understand the mechanisms by which spatial fear and avoidance behaviors are created and mitigated within schools, as well as the ways in which school security measures prevent victimization in the first place. Schools should actively work to protect and promote the well-being of students who experience homophobic victimization using evidence-based practices (such as having clear antibullying policies that include language about sexual orientation, or developing trusting relationships between students and adults in school; see also Morgan et al., 2014) rather than solely relying on visible school security measures as a panacea for all types of victimization and fear in school.

Competing Interests

The authors report no competing interests.

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Table 1. *Descriptive Statistics of Selected Demographic Variables and Primary Variables of Interest*

	Valid *N*	% Yes
Self-identified race	41,229	
White		77.3
Black		16.1
Asian		4.1
American Indian/Alaskan Native		0.6
Hawaiian/Pacific Islander		0.2
Multiracial		1.5
Hispanic ethnicity	41,032	16.5
Household income	34,144	
Less than $10,000		5.1
$10,000 to $19,999		10.5
$20,000 to $29,999		11.6
$30,000 to $39,999		12.4
$40,000 to $49,999		10.7
$50,000 to $74,999		19.9
$75,000 and over		29.5
Region	41,299	
Northeast		17.6
Midwest		25.0
South		35.0
West		22.2
Metropolitan Statistical Area (MSA) status	41,229	
In MSA (central city)		27.4
In MSA (noncentral city)		54.1
Not in MSA		18.4
Guards present	40,408	66.3
Cameras present	27,909	64.5
Metal detector present	39,374	10.3
Homophobic victimization	32,556	1.0
Avoiding entryways	40,896	1.1
Avoiding hallways	40,885	2.1
Avoiding cafeterias	40,879	1.4
Avoiding bathrooms	40,874	2.1
Avoiding parking lots	40,876	1.4
Avoiding classrooms	40,898	0.6
Combined avoidance	40,781	5.1
Fear of victimization at school	40,877	
Almost never		15.0
Sometimes		4.1
Most of the time		0.5

Table 2. *Polychoric Correlations and Standard Errors of the Primary Independent and Dependent Variables: Compiled Sample from 1999-2009 SCS Surveys (N = 41,229)*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Homophobic	1.00											
victimization	0.00											
2. Guards	.02	1.00										
	0.03	0.00										
3. Metal detector	-.06	.48	1.00									
	0.03	0.01	0.00									
4. Cameras	.05	.37	.30	1.00								
	0.03	0.01	0.01	0.00								
5. Entryways	.22	.11	.17	.03	1.00							
	0.05	0.02	0.03	0.03	0.00							
6. Hallways	.29	.13	.12	.07	.77	1.00						
	0.04	0.02	0.02	0.02	0.01	0.00						
7. Cafeterias	.36	.09	.13	.03	.74	.81	1.00					
	0.04	0.02	0.03	0.02	0.02	0.01	0.00					
8. Bathrooms	.29	.12	.11	.01	.70	.80	.77	1.00				
	0.04	0.02	0.02	0.02	0.02	0.01	0.01	0.00				
9. Parking lots	.24	.12	.11	.02	.71	.72	.72	.75	1.00			
	0.05	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.00			
10. Classrooms	.37	.10	.11	.05	.59	.64	.62	.63	.55	1.00		
	0.05	0.03	0.03	0.03	0.03	0.02	0.03	0.02	0.03	0.00		
11. Combined	.35	.12	.10	.04	—	—	—	—	—	—	1.00	
	0.03	0.01	0.02	0.01	—	—	—	—	—	—	0.00	
12. Fear of	.30	.11	.13	.04	.48	.58	.53	.57	.49	.59	.61	1.00
victimization at school	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00

Note. Standard errors are included under the estimates of the polychoric correlations.

Table 3. *Summary of Main Effects of Homophobic Victimization and Visible Security Measures on School Avoidance (N = 41,229)*

	Entry[a]	Hallways[a]	Cafeteria[a]	Bathrooms[a]	Parking lot[a]	Classrooms[a]	Combined avoidance[b]	Fear of victimization at school[c]
Homophobic victimization	3.12*** [1.81, 5.37]	3.86*** [2.65, 5.63]	5.64*** [3.85, 8.26]	3.86*** [2.63, 5.65]	3.10*** [1.91, 5.03]	6.27*** [3.76, 10.46]	4.60*** [3.02, 6.99]	3.62*** [2.93, 4.47]
Guards	1.22 [0.96, 1.54]	1.37** [1.14, 1.63]	1.28** [1.04, 1.58]	1.39*** [1.17, 1.66]	1.47*** [1.18, 1.81]	1.19 [0.86, 1.64]	1.34*** [1.18, 1.52]	1.20*** [1.13, 1.28]
Metal detector	1.60*** [1.26, 2.04]	1.27* [1.04, 1.55]	1.49** [1.18, 1.88]	1.27** [1.04, 1.56]	1.27 [0.99, 1.61]	1.25 [0.87, 1.80]	1.33** [1.13, 1.57]	1.36*** [1.25, 1.47]
Cameras	1.16 [0.92, 1.46]	1.15 [0.96, 1.38]	0.97 [0.78, 1.21]	1.02 [0.85, 1.24]	1.05 [0.85, 1.29]	1.10 [0.78, 1.56]	1.07 [0.94, 1.23]	1.14** [1.06, 1.22]
Cutpoint 1								-32.65** [-52.27, -13.04]
Cutpoint 2								-30.97** [-50.58, -11.36]
Cutpoint 3								-28.70** [-48.31, -9.08]
F test	49.73***	18.56***	15.27***	20.96***	12.15***	12.11***	25.65***	55.68***

Note. These models present regression coefficients and confidence intervals controlling for the covariates listed in the Method section.

[a]Logistic regression was used for each of the place-specific avoidance behaviors and the results are given in terms of odds ratios (OR).

[b]Negative binomial regression was used for the combined school avoidance behaviors outcome and the results are given in terms of incident rate ratios (IRR).

[c]Ordinal logistic regression was used for the fear of victimization at school outcome and the results are given in terms of OR.

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

Table 4. *Interaction Effects between Homophobic Victimization and Visible Security Measures on School Avoidance (N = 41,229)*

	Entry[a]	Hallways[a]	Cafeteria[a]	Bathrooms[a]	Parking lot[a]	Classrooms[a]	Combined avoidance[b]	Fear of victimization at school[c]
Homophobic victimization	3.49 [0.94, 12.96]	3.12* [1.19, 8.18]	5.47*** [2.30, 13.01]	2.99* [1.15, 7.78]	2.78 [0.78, 9.87]	3.80* [1.03, 14.10]	3.96** [1.57, 10.01]	2.59*** [1.59, 4.22]
Guards	1.22 [0.96, 1.5]	1.37** [1.15 1.64]	1.29* [1.05, 1.60]	1.40*** [1.17, 1.67]	1.46** [1.18, 1.81]	1.19 [0.85, 1.65]	1.34*** [1.18, 1.52]	1.20*** [1.13, 1.27]
Metal detector	1.63*** [1.27, 2.08]	1.27* [1.03, 1.55]	1.43** [1.12, 1.81]	1.27* [1.04, 1.56]	1.72 [0.99, 1.62]	1.22 [0.83, 1.78]	1.34** [1.14, 1.58]	1.36*** [1.25, 1.48]
Cameras	1.16 [0.92, 1.47]	1.14 [0.95, 1.36]	0.97 [0.78, 1.21]	1.01 [0.83, 1.22]	1.05 [0.85, 1.29]	1.07 [0.75, 1.52]	1.07 [0.94, 1.22]	1.13** [1.06, 1.22]
HV[d] x Guards	1.03 [0.26, 4.12]	0.8 [0.31, 2.07]	0.82 [0.32, 2.1]	0.86 [0.33, 2.23]	1.17 [0.31, 4.50]	0.98 [0.27, 3.58]	0.97 [0.37, 2.58]	1.46 [0.88, 2.43]
HV[d] x Metal detector	0.40 [0.05, 3.41]	1.00 [0.30, 3.39]	2.64 [0.91, 7.65]	0.99 [0.29, 3.42]	0.91 [0.18, 4.61]	1.50 [0.36, 6.31]	0.77 [0.17, 3.54]	0.67 [0.30, 1.48]
HV[d] x Cameras	0.93 [0.26, 3.39]	1.70 [0.66, 4.37]	1.05 [0.42, 2.65]	1.69 [0.66, 4.32]	0.98 [0.30, 3.14]	1.86 [0.51, 6.73]	1.32 [0.52, 3.39]	1.13 [0.70, 1.84]
Cutpoint 1								-32.45** [-52.07, -12.83]
Cutpoint 2								-30.77** [-50.38, -11.15]
Cutpoint 3								-28.49** [-48.11, -8.88]
F test	11.65***	16.98***	14.05***	19.22***	11.04***	11.22***	23.47***	50.99***

Note. These models present regression coefficients and confidence intervals controlling for the covariates listed in the Method section.
[a]Logistic regression was used for each of the place-specific avoidance behaviors and the results are given in terms of odds ratios (OR).
[b]Negative binomial regression was used for the combined school avoidance behaviors outcome and the results are given in terms of incident rate ratios (IRR).
[c]Ordinal logistic regression was used for the fear of victimization at school outcome and the results are given in terms of OR.
[d]HV = homophobic victimization.
* $p < .05$. ** $p < .01$. *** $p < .001$.