Statewide Assessment of Sexual Harassment in Virginia High Schools:

Prevalence and Impact on Student Well-Being

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Statewide Assessment of Sexual Harassment in Virginia High Schools: Prevalence and Impact on Student Well-Being

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TABLE OF CONTENTS

Dissertation Abstract

Sexual harassment is a prevalent yet understudied challenge adolescents face in high school. This three-paper dissertation investigated the prevalence of sexual harassment in Virginia high schools, its association with negative student well-being, and whether positive school climate serves as a protective factor that can reduce both the prevalence and impact of sexual harassment on students. Data for all three studies were obtained from student responses to the Virginia Secondary School Climate Survey. The first study examined 2016 data from 62,679 students (grades 9-12) in 320 high schools, and the second and third studies used 2018 data from 85,750 students (grades 9-12) in 322 high schools.

The first paper (Crowley, Datta, Stohlman, Cornell, & Konold, 2019) sought to examine the prevalence of sexual harassment by testing a new, brief measure, and to identify its association with school climate. This paper investigated three research questions: (1) Is there evidence to support a 4-item multilevel measure of school sexual harassment? (2) What is the prevalence of sexual harassment in a statewide high school sample, and how does sexual harassment vary across student characteristics of gender, grade level, race/ethnicity, and SES? (3) Is an authoritative school climate associated with lower levels of sexual harassment for high school students at the individual and/or school levels? As hypothesized, results of a multilevel confirmatory factor analysis indicated good fit for a single sexual harassment factor at both student and school levels. A multiway analysis of variance demonstrated that sexual harassment was prevalent among 38.4% of students and varied across demographic groups. Multilevel hierarchical regression analyses indicated that an authoritative school climate accounted for 5.7% of the student-level variance and 38.3% of the school-level variance in sexual harassment scores. Overall, these results support the use of the 4-item sexual harassment scale to measure student

experiences of sexual harassment in schools. Furthermore, findings demonstrate that sexual harassment is prevalent among high school students, and suggest that fostering an authoritative school climate could help reduce sexual harassment rates in schools.

The second paper (Crowley & Cornell, 2020) examined the prevalence and impact of sexual harassment compared to bullying, an overlapping yet theoretically distinct construct that has received comparatively greater attention in school victimization research and policy. This paper examined three research questions: 1) What is the prevalence of sexual harassment compared to bullying in high school, and how does prevalence differ across gender, grade, race/ethnicity, and SES? (2) How is sexual harassment associated with student well-being indicators, as compared to bullying? (3) What is the association of a single experience of sexual harassment with student distress? As hypothesized, descriptive statistics and multivariate analysis of variance indicated that sexual harassment and bullying were similarly prevalent (40.7% harassed vs. 38.8% bullied, with 24.6% reporting both) and rates of both differed across demographic groups of gender, grade, race/ethnicity, and SES. Hierarchical regression models indicated that sexual harassment and bullying were similarly associated with all eight well-being indicators, and students who experienced both sexual harassment and bullying reported distress scores greater than two standard deviations above the mean. Independent sample t-tests indicated that even a single experience of sexual harassment was associated with higher student distress, with experiences of sexual rumors being the most distressing. These results suggest that attention to either bullying or sexual harassment alone would not yield an adequate assessment of adolescent victimization experiences, and prevention efforts should consider both forms of aggression in order to provide safer, healthier learning environments for students.

The third paper (Crowley, Cornell, & Konold, under review) built on the previous two papers by examining whether positive school climate characteristics, demonstrated in Paper 1 to be associated with lower rates of sexual harassment, are also associated with less-negative well-being outcomes for harassed students. This paper investigated one primary research question: Do school climate measures of disciplinary structure, student support, and engagement moderate the relationship between sexual harassment and student well-being? As hypothesized, hierarchical interaction models indicated that perceptions of school climate moderated the relations between sexual harassment experiences and student well-being, such that victims of sexual harassment who perceived their schools as more highly structured and supportive, and those who reported higher engagement in their schools, reported less-negative outcomes on measures of well-being. For example, when students were harassed in less supportive schools, their rate of attempting suicide was 22%, whereas when they were harassed in more supportive schools their rate of attempting suicide was only 6%. Furthermore, there was a larger difference in suicide attempts between students who were harassed vs. not harassed in low support schools (16% difference) as compared to those who were harassed vs. not harassed in high support schools (4% difference). These results suggest that stakeholders can mitigate the impact of sexual harassment on students by fostering a positive school climate.

Although these studies were correlational and cannot establish a causal effect, the results suggest that in order to reduce the prevalence and impact of sexual harassment, stakeholders should monitor the scope of the problem, understand the impact of the problem (particularly in relation to distinct yet overlapping types of victimization), and find ways to reduce the prevalence and impact of the problem on students through means such as fostering a positive school climate.

Project Overview

In 2017, an outpouring of news reports of sexual harassment in professional settings triggered a cultural shift known as the Me Too movement. Originally founded by activist Tarana Burke eleven years earlier to draw attention to sexual violence against young women of color, the movement gained national attention after reports of sexual misconduct by prominent professionals came to light (Garcia, 2017). Although the 2017 Me Too movement was primarily concerned with sexual harassment in the workplace, it is important to recognize that this problem does not begin in adulthood, but is clearly evident in adolescence as well. Sexual harassment is known to be prevalent in schools (AAUW, 2011), highlighting a need for stakeholders to understand, detect, and take action to stop it. Efforts to combat sexual harassment among adults can be extended to include adolescents in schools.

School sexual harassment is defined by the U.S. Department of Education (ED) as any unwelcome behavior of a sexual nature that interferes with a student's ability to learn, study, work, or participate in school activities. Sexual harassment can take many different forms, such as verbal harassment (e.g. unwanted sexual humor, homophobic slurs), nonverbal harassment (e.g. unwanted written sexual communications, gestures), or physical harassment (e.g. unwanted sexual touching, kissing; USED Office for Civil Rights, 2008). Schools have a legal obligation to address sexual harassment when it is severe enough to interfere with learning (Title IX).

In order to address school sexual harassment, stakeholders must first understand the nature of the problem. Filling important gaps in the research literature on sexual harassment can help achieve this goal. First, it is important to measure and monitor the prevalence of sexual harassment in schools, and to understand whether certain groups are more highly victimized than others. In order to do this, school officials would benefit from having a measure that can reliably

detect student experiences of sexual harassment. Such a measure should meet high psychometric standards at the student and school levels, in order to monitor rates within and between schools. It should also be brief enough that it can be incorporated into routine school climate surveys to allow for efficient monitoring and consistent tracking of progress over time as schools endeavor to reduce sexual harassment rates.

Second, it is important to understand the potential effects of sexual harassment on student distress and well-being. Prior research suggests that sexual harassment may be associated with negative socioemotional and academic indicators for students. Theoretically, it is likely that experiences of sexual harassment could make students feel distressed and withdrawn, leading to increased likelihood of mental health difficulties and potential association with risky behaviors such as substance use or suicidality (Gruber & Fineran, 2008). Similarly, being harassed in the school context could make students feel unsafe and disengaged from their studies, potentially leading to poor academic achievement and engagement in school (Gruber & Fineran, 2016).

In particular, school officials would benefit from understanding how the prevalence and potential impact of sexual harassment compare to other types of peer aggression that have received comparatively greater research attention, such as bullying. Evidence suggests that both sexual harassment and bullying are prevalent in schools and associated with negative well-being indicators (Gruber & Fineran, 2016), but few studies have examined the two types of aggression in a single sample in order to compare their prevalence and severity. Furthermore, sexual harassment researchers argue that sexual harassment has received less attention than bullying in schools and needs greater priority in policy and research (Gruber & Fineran, 2008).

Finally, it is necessary for stakeholders to identify factors that can lessen the prevalence and impact of sexual harassment in schools. Extensive research demonstrates that cultivating a

positive climate in a school is associated with lower levels of various types of peer victimization (Bradshaw, 2015; Cornell, Shukla, & Konold, 2015; Guerra, Williams, & Sadek, 2011). For example, Cornell, Shukla, and Konold (2015) found that schools higher in positive school climate indicators of structure and support had lower prevalence of teasing and bullying, as well as lower rates of other aggression such as fighting and threatening behavior. For this reason, it is useful to examine whether a positive school climate might also be associated with lower rates of sexual harassment victimization, as well as how the potential interaction of victimization experiences and school climate perceptions might impact student well-being.

This three-paper dissertation investigated the prevalence of sexual harassment in Virginia high schools and its associations with both student well-being and school climate characteristics, using a brief, statistically reliable sexual harassment measure. The first paper provided validation for the sexual harassment measure, and used this measure to assess the prevalence of sexual harassment in high schools and whether rates differed across demographic groups. This paper also investigated whether positive school climate characteristics were associated with lower sexual harassment rates. Analyses were conducted using data from a 2016 school climate survey. This paper, "Authoritative School Climate and Sexual Harassment: A Cross-sectional Multilevel Analysis of Student Self-Reports," was presented as a poster at the American Psychological Association Annual Conference in August, 2018. It was published as the lead article of *School Psychology* in September, 2019, with me as lead author. Co-authors were Pooja Datta, Shelby Stohlman, Dewey Cornell, and Tim Konold. Construction and validation of the sexual harassment measure was contributed by Pooja Datta. Shelby Stohlman helped compile past research studies for the literature review. Dewey Cornell and Tim Konold assisted with planning and execution of analyses, and oversight in writing the manuscript.

The second paper used the sexual harassment measure to compare the prevalence of sexual harassment and bullying in a single sample, and to compare their associations with student well-being. Analyses were conducted using data from a 2018 school climate survey. This paper, "Associations of Bullying and Sexual Harassment with Student Well-Being Indicators", was presented as a poster at the American Psychological Association Annual Conference in August, 2018. The manuscript was published online by *Psychology of Violence* in August, 2020, with me as lead author. The co-author, Dewey Cornell, assisted with formulation of the paper topic, planning of analyses, and oversight in writing the manuscript.

The third paper examined school climate characteristics as moderators of the relationship between sexual harassment and student well-being. Analyses were conducted using the same 2018 sample as was used for Paper 2. This paper, "School Climate Moderates the Association Between Sexual Harassment and Student Well-Being", was presented virtually as a poster at the American Psychological Association Annual Conference in August, 2020. The manuscript is under review for publication in *School Mental Health*, with me as lead author. The co-authors, Dewey Cornell and Tim Konold, assisted with formulation of the paper topic, planning of analyses, and editing the manuscript.

Paper 1. In order for school authorities to address sexual harassment, it is helpful for them to understand the prevalence of the problem and identify factors such as positive school climate that could potentially lessen it. One way for school authorities to monitor sexual harassment and its potential association with school climate is to encourage routine assessment of sexual harassment in their schools. Such an assessment should meet high psychometric standards, yet be brief enough that it can be incorporated into routine school climate measures.

Additionally, authorities would benefit from identifying specific school climate dimensions that are associated with lower rates of victimization. School climate is broadly defined as the quality of school life that reflects the norms, goals, values, and practices of a school (Cohen, McCabe, Michelli, & Pickeral, 2009). A positive school climate is often acknowledged as a factor influencing school victimization, but there is little agreement on the composition or dimensional structure of school climate (Cohen et al., 2009; Cornell & Mayer, 2010). For example, Ormerod, Collinsworth, and Perry (2008) operationalized positive climate as a climate in which students perceive that their school is not tolerant of sexual harassment, and found that these positive climate perceptions were associated with lower rates of sexual harassment at the school level. Attar-Schwartz (2009) operationalized positive school climate as positive perceptions of school policy, teacher support, and student participation in decisions, and found that positive perceptions of school climate were associated with lower rates of sexual harassment victimization at the student and school levels.

One theory of school climate that is particularly well-established in the literature is authoritative school climate theory, which states that positive climates are those that are high in both disciplinary structure (i.e., perception that rules are strict but fair), and student support, (i.e. perception that students feel supported and respected by school personnel; Gregory & Cornell, 2009; Gregory et al., 2010). There is substantial research linking authoritative school climate to various forms of peer victimization; for example, Gregory et al. (2010) found that in a sample of high school students and teachers, high structure and high support were associated with lower levels of bullying, theft, and property damage. These findings suggest that the authoritative school climate dimensions of structure and support could also be associated with lower rates of sexual harassment victimization, indicating a need to investigate this potential association.

Our research group developed a brief, four-item multilevel sexual harassment measure that can be used for routine assessment of sexual harassment and school climate factors, derived from longer, widely used measures (AAUW, 2011; Espelage & Holt, 2001). The present study investigated three research questions: (1) Is there evidence to support a four-item multilevel measure of school sexual harassment? We hypothesized that the four-item measure would demonstrate support for a one-factor scale measuring student experiences of sexual harassment; (2) What is the prevalence of sexual harassment in a statewide high school sample, and how do rates vary across student characteristics of gender, grade level, race/ethnicity, and socio-economic status (SES)? We hypothesized that sexual harassment would be prevalent in schools and rates would differ across demographic groups; (3) Is an authoritative school climate associated with lower levels of sexual harassment for high school students at the individual and/or school levels? We hypothesized that, at the student level, students who view their school as structured and supportive would report less sexual harassment and that, at the school level, schools characterized by high structure and high support would have lower levels of sexual harassment.

The analytic sample consisted of 62,679 students in grades 9-12 from 320 public high schools in Virginia. This study concerned a subset of items from a statewide survey administered in the 2016 spring semester. Sexual harassment was measured by a scale consisting of four items, each beginning with the root, “During the past 12 months how many times did another student …” The four items assessed student’s experiences of: (a) multiple forms of unwelcome sexual comments or jokes, (b) sexual rumors being spread about them, (c) being repeatedly bothered to go out with someone, and (d) multiple forms of unwanted physical contact of a

sexual nature. Students responded to these items on a five-point Likert scale (1 = *never*, 2 = *once,* 3 = *twice*, 4 = *three times*, 5 = *Four or more times*).

Supportiveness of teacher-student relationships was measured with an eight-item scale (Konold et al., 2014). Representative items included "Most teachers and other adults at this school want all students to do well" and "There are adults at this school I could talk with if I had a personal problem." Disciplinary structure was measured with a seven-item scale (Konold et al., 2014). Representative items included, "The adults at this school are too strict" and "Students are treated fairly regardless of their race or ethnicity." Support and structure items were answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*).

As described in the next chapter, results of a single-factor, multilevel confirmatory factor analysis suggested good fit for the sexual harassment measure, providing support for the first research hypothesis. Using this measure to assess prevalence, the second research hypothesis was also supported. More than one third of students reported experiencing harassment at least once in the past school year. Differences across gender, race/ethnicity, grade level, and SES were detected, which are further described in the next chapter.

The third research hypothesis was also supported. Results from multilevel, hierarchical linear regression indicated that authoritative school climate factors were associated with sexual harassment rates. Higher levels of perceived structure and support were associated with fewer reported sexual harassment victimization experiences at both the student and school levels.

Paper 2. As school authorities gain greater awareness of the problem of sexual harassment, there is need for them to understand its potential associations with student distress and well-being. In particular, it is helpful for schools to understand these factors relative to other types of peer aggression that have historically received comparatively greater research attention,

such as bullying. Few studies have examined the two types of aggression in a single sample in order to compare their prevalence and impact.

There are two substantial bodies of research on school bullying and sexual harassment, but relatively little overlap. Research on school bullying and sexual harassment suggest that both types of peer aggression are associated with negative student well-being indicators (Gruber & Fineran, 2008; Gruber & Fineran, 2016), but the two bodies of literature take different perspectives on what makes each one harmful (Turner, Finkelhor, Shattuck, Hamby & Mitchell, 2015). Furthermore, studies have generated different estimates of their prevalence and association using correspondingly different survey questions.

Researchers typically advocate for separate forms of intervention and separate movements calling for attention to each problem, without acknowledging potential similarities or overlap in the two constructs (Turner et al., 2015). Sexual harassment researchers argue that sexual harassment has received less attention than bullying in schools and needs greater focus in policy and research (Gruber & Fineran, 2008). It is important for researchers to know how the prevalence of sexual harassment compares to that of bullying, as well as how many students may experience both types of aggression. From a policy perspective, school authorities need to know whether their policies regarding bullying also adequately address the problem of sexual harassment among adolescents.

In addition to understanding the prevalence and impact of sexual harassment relative to bullying, it is also helpful for school stakeholders to understand the threshold of sexual harassment that is associated with student distress. Determining a threshold for sexual harassment can help stakeholders be attuned to student experiences severe enough to warrant attention and intervention by school authorities.

Solberg and Olweus (2003) have already examined the threshold of bullying associated with distress. They found that a frequency of being bullied "2 or 3 times a month" was a reasonable lower-bound cutoff point, as students at or above this threshold differed in socioemotional outcomes from those bullied less frequently. However, a distinguishing definitional characteristic of bullying and sexual harassment is that, in research and practice, behavior typically has to be repeated over time in order to be considered bullying. The definition of sexual harassment has no such specification, and therefore does not necessarily need to be repeated to constitute sexual harassment.

A landmark Supreme Court case, Davis v. Monroe County Board of Education (1999), found that school officials can be held responsible for failing to stop sexual harassment among their students under certain conditions. The Court specified that "behavior must be serious enough to have the systemic effect of denying the victim equal access to an education program or activity" and "a single instance of severe one-on-one peer harassment could, in theory, be said to have such a systemic effect" (pg. 19). This distinct policy definition of sexual harassment suggests the need for a different kind of threshold analysis than that of bullying. Since behaviors need not be repeated to constitute sexual harassment, this raises the question of how much impact a *single* incident of sexual harassment might have on students.

The second study examined three research questions: 1) What is the prevalence of sexual harassment compared to bullying in high school, and how does prevalence differ across gender, grade, race/ethnicity, and SES? We hypothesized that sexual harassment would be as prevalent as bullying, and that both of their rates would differ across demographic groups; (2) How is sexual harassment associated with student well-being indicators, as compared to bullying? We hypothesized that both bullying and sexual harassment would be associated with negative well-

being indicators, and that students who experienced both bullying and sexual harassment would report poorer well-being than other students; (3) What is the association of a single experience of sexual harassment with student distress? We hypothesized that even a single experience of sexual harassment would be associated with increased distress.

The analytic sample consisted of 85,750 students in grades 9-12 from 322 public high schools in Virginia. Items were taken from a statewide survey administered in the spring semester of 2018.

To measure bullying, students were given a definition derived from Olweus (1996) and then asked to respond to a four-item scale assessing how many times in the past school year they had experienced different types of bullying. Each type was defined: physical ("repeatedly hitting, kicking, or shoving someone weaker on purpose"), verbal ("repeatedly teasing, putting down, or insulting someone on purpose"), social ("getting others repeatedly to ignore or leave someone out on purpose"), and cyber bullying ("using technology (cell phone, email, Internet, etc.) to tease or put down someone"). Students responded to these items on a four-point Likert-scale (1 = *never*, 2 = *once or twice,* 3 = *about once per week,* and 4 = *more than once per month*). Sexual harassment was measured in the same way as in Paper 1.

There were eight indicators of student well-being, including measures of mental health, alcohol use, marijuana use, suicide attempts, feelings of safety, engagement in school, academic aspirations, and grades (see chapter 3 for more information).

The first research hypothesis was supported; descriptive statistics and multivariate analysis of variance indicated that sexual harassment and bullying were similarly prevalent (40.7% harassed vs. 38.8% bullied, with 24.6% of students reporting both) and rates of both

differed across demographic groups of gender, grade, race/ethnicity, and SES. More information about demographic differences is included in chapter 3.

The second research hypothesis was also supported. Hierarchical regression models indicated that sexual harassment and bullying were similarly associated with all eight well-being indicators. Furthermore, a one-way analysis of covariance indicated that students who experienced both bullying and sexual harassment reported distress scores greater than two standard deviations above the mean.

Finally, the third research hypothesis was supported; independent sample t-tests indicated that students who reported experiencing a single sexual harassment incident reported higher mean distress scores than those who did not experience such victimization (small-to-medium effect sizes). This threshold was found for all four types of sexual harassment measured.

Paper 3. In the two preceding papers, we found evidence that sexual harassment is prevalent in high schools and associated with negative student well-being. Although it is important to study the negative outcomes experienced by those who are sexually harassed, it is equally important to investigate factors that may buffer sexual harassment victims from distress and poor well-being. Given that the presence of authoritative school climate factors of structure and support is associated with lower rates of sexual harassment in schools (Paper 1), it is worth investigating whether presence of these factors may also reduce the *impact* of sexual harassment experiences for students. In a correlational study, findings are open to multiple interpretations, and true causal effects cannot be determined. Thus, references to the impact of sexual harassment in our study represent the theoretical hypothesized mechanism of observed associations, not statistical claims of causality.

Existing studies support the notion that positive experiences of school climate may serve as a protective factor for students who experience different types of victimization. For example, O'Donnell, Roberts, and Schwab-Stone (2008) found that in a sample of Gambian high school students, students who perceived their school climates in a positive light reported lower traumatic stress after witnessing or experiencing community violence than those who did not perceive their school climates positively. Similarly, Davidson and Demaray (2007) found that school support (one of the main factors of authoritative school climate) moderated the relationship between bullying and internalizing distress. Students who perceived their teachers and schools as supportive endorsed lesser internalizing problems after being bullied than students who perceived teachers and schools as less supportive (Davidson & Demaray, 2007).

Findings such as these suggest that student perceptions of school climate can buffer the negative effects of victimization they experience. For example, students who perceive their schools as structured and fair may be more likely to report victimization and trust officials to address it, and as a result feel less distressed about the victimization that occurred. Similarly, students who are harassed in school environments generally viewed as caring and supportive may feel less vulnerable and alienated, and more likely to seek help, following victimization.

These ideas suggest a need for further investigation into the moderating effects of school climate in the relationship between sexual harassment and student well-being. The third paper investigated this relationship, hypothesizing that authoritative school climate factors would provide a protective effect such that students who are harassed in more authoritative school climates will report better well-being than those who are harassed in less authoritative climates.

The analytic sample was the same as for Paper 2, and consisted of 85,750 students in grades 9-12 from 322 public high schools in Virginia. This study concerned a subset of items

measuring student sexual harassment experiences; perceptions of support, disciplinary structure, and engagement in school; and well-being indicators, which were all part of a statewide survey administered in the spring semester of 2018. Sexual harassment, support, and structure were measured as described in Paper 1.

Additionally, this study examined student engagement in school as a potentially relevant third indicator of positive school climate. Engagement was measured with a six-item scale that included two factors: cognitive engagement (investment in learning) and affective engagement (positive feelings towards school). Three items measured cognitive engagement (e.g. "I want to learn as much as I can at school") and three items measured affective engagement (e.g. "I am proud to be a student at this school"). All items were answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*).

Outcome variables focused on four indicators of student well-being, including mental health, suicide attempts, alcohol use, and marijuana use. See chapter 4 for more information.

The primary research hypothesis was supported. Hierarchical interaction models indicated that perceptions of school climate moderated the relations between sexual harassment experiences and student well-being, such that victims of sexual harassment who perceived their schools as more highly structured and supportive, and those who reported higher engagement in their schools, reported less-negative outcomes on measures of well-being.

Implications and Future Directions

In each chapter, we discuss the potential implications of findings on sexual harassment research, school policy, and intervention programs. As the findings from Paper 1 suggest, routine assessment of sexual harassment can help school psychologists bring attention to this under-recognized problem, and fostering a positive school climate can help reduce rates of sexual

harassment among students. From a research standpoint, a brief, reliable measure of sexual harassment has practical value for routine use in school climate surveys and victimization studies. From an intervention standpoint, schools can routinely measure sexual harassment in order to increase awareness of the problem, inform educational efforts, and evaluate intervention/policy efforts. Information about the prevalence of sexual harassment can be shared with students, staff, and parents in order to increase awareness, stimulate discussion, and encourage reporting. Furthermore, given the demonstrated association between authoritative school climate and sexual harassment rates, it is likely that school climate interventions could enhance the effectiveness of existing educational programs and contribute to school-wide efforts to reduce sexual harassment. For example, students may know what sexual harassment is and be told to report it, but they may be less likely to come forward if they do not feel supported by school authorities or believe that policies around sexual harassment are clear and fairly enforced.

Findings from Paper 2 suggest that while bullying and sexual harassment are not the same construct, they are meaningfully related forms of aggression that have additive negative effects on well-being. These findings demonstrate the importance of measuring both sexual harassment and bullying in studies of adolescent victimization. Intervention programs and school policies addressing peer victimization in schools should be comprehensive and incorporate many different types of experiences in order to foster understanding for both students and school personnel. Furthermore, although many sexual harassment incidents in schools do not meet criteria to be considered federal policy violations, stakeholders should be aware of the adverse impact of infrequent or seemingly less severe victimization experiences on students. Our findings support federal and state policies mandating that schools monitor and respond to both bullying and sexual harassment.

The findings of Paper 3 build on those of Paper 1 and Paper 2, as they support the idea that authoritative school climate theory could inform intervention programs not only to reduce sexual harassment rates, but also to decrease the negative impact on the well-being of students who are harassed. There are specific ways in which sexual harassment interventions can emulate the principles of authoritative school climate. For example, informational lessons about policies against sexual harassment and consequences for perpetration, as well as school-wide efforts to improve protocols for addressing perpetration, may enhance students' perceptions of the disciplinary structure of their schools. Furthermore, lessons about respect and the ability of bystanders to intervene in victimization, as well as school-level practices of increasing the presence of school personnel in unsafe areas, could increase the likelihood that students will feel supported and seek help if they are harassed. Beyond the scope of largescale interventions, actions by teachers, staff, and school mental health professionals to communicate respect, support, and guidelines for appropriate behavior, can be protective for students who experience sexual harassment. Efforts to detect and monitor peer victimization, as well as foster a positive school climate to reduce the prevalence and impact of it, can enhance the abilities of stakeholders to ensure the safety and well-being of their students.

One limitation of these studies is the correlational and cross-sectional nature of their designs, which leaves the results open for multidirectional interpretation and cannot establish causal effects. Another limitation of the studies is that all items are based on student self-report and share method variance, which could lead to response bias such as under- or over-reporting. Finally, it is possible that sexual harassment is associated with well-being or climate-related variables that were not assessed in the present studies. For example, the U.S. Department of

Education school climate model has 13 school climate components organized into three domains of engagement, safety, and environment (Bradshaw, Waasdorp, Debnam, & Johnson, 2014).

Despite the above limitations, this three-paper dissertation examined several gaps in the research literature on sexual harassment that provide important information to help stakeholders reduce the prevalence and impact of sexual harassment in schools. Future research would be beneficial both for addressing limitations and for building on the present findings. It would be useful to examine independent measures of sexual harassment that do not share method variance with the present survey, such as cases reported to school authorities. Furthermore, future studies could examine multiple-victimization effects, as well as interactions between bullying, sexual harassment, and demographics such as sexual orientation. Finally, future research could explore other variables influencing the school climate-sexual harassment relationship, such as the extent and quality of student support services in the school. Future longitudinal research and intervention studies are needed to assess the directionality of all reported relationships and to directly examine how improvements to school climate may lessen the prevalence and impact of sexual harassment for students.

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Abstracts

Manuscript One: Authoritative School Climate and Sexual Harassment: A Cross-sectional Multilevel Analysis of Student Self-Reports

School sexual harassment (SH) is defined as unwelcome behavior of a sexual nature that interferes with a student's ability to learn. There is an important need for schools to assess the prevalence of SH and its relation to school climate to guide intervention efforts. This study investigated three research questions: (a) Is there psychometric support for a 4-item multilevel measure of SH? (b) What is the prevalence of SH in a statewide high school sample, and how does SH vary across gender, grade level, race/ethnicity, and socioeconomic status? (c) Is an authoritative school climate—characterized by strict but fair discipline and supportive teacher-student relationships—associated with lower levels of SH for students? A statewide sample of high school students (N = 62,679) completed a school climate survey that included a new 4-item measure of SH. Results of a multilevel confirmatory factor analysis indicated good fit for a single SH factor at both student and school levels. A multiway analysis of variance demonstrated the high prevalence of SH and variations across demographic groups. Multilevel hierarchical regression analyses indicated that an authoritative school climate accounted for 5.7% of the student-level variance and 38.3% of the school-level variance in SH scores. Routine assessment of SH can help school psychologists bring attention to this under-recognized problem.

Manuscript Two: Associations of Bullying and Sexual Harassment with Student Well-Being Indicators

Objective. Although both school bullying and sexual harassment have been widely studied, there is little research comparing their prevalence and impact within a single sample. The present study investigated three research questions: (1) What is the prevalence of bullying compared to sexual harassment in high school, and how does prevalence differ across gender, grade, race/ethnicity, and socioeconomic status? (2) How is bullying associated with student well-being indicators, as compared to sexual harassment? (3) What is the association of just a single experience of sexual harassment with student distress? ***Method.*** A statewide survey of 85,750 students (grades 9-12) in 322 high schools reported how many times in the past school year they had experienced different types of bullying and sexual harassment. Participants also reported about mental health, risk behaviors, academic achievement, student engagement, and feelings of safety. ***Results.*** Sexual harassment was slightly more prevalent than bullying, but both demonstrated meaningful associations with student well-being indicators. Even a single experience of sexual harassment was associated with higher student distress, with experiences of sexual rumors being the most distressing. ***Conclusions.*** Researchers should be aware that bullying and sexual harassment are prevalent in schools and associated with negative well-being indicators. Attention to either alone would not yield an adequate assessment of adolescent victimization experiences, and prevention efforts should consider both forms of aggression in order to provide safer, healthier learning environments for students.

Manuscript Three: School Climate Moderates the Association Between Sexual Harassment and Student Well-Being

Sexual harassment is a prevalent yet understudied challenge adolescents face in high school. Because sexual harassment is associated with negative well-being indicators like depression, substance use, and suicidality, school stakeholders must understand its potential consequences for student well-being, and how school climate might impact prevention efforts. The present study investigated whether school climate measures of disciplinary structure, student support, and engagement moderate the relationship between sexual harassment and student well-being. A statewide survey of 85,750 students (grades 9-12) in 322 high schools reported how many times in the past school year they had experienced sexual harassment. Participants also reported school climate perceptions and measures of well-being, including indicators of mental health, substance use, and suicide attempts. Findings indicated that positive perceptions of school climate moderated the relations between sexual harassment experiences and student well-being. The findings from this study will provide valuable information for school stakeholders as they seek to mitigate the impact of sexual harassment in schools.

Manuscript One

Authoritative School Climate and Sexual Harassment: A Cross-sectional Multilevel Analysis of Student Self-Reports

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Abstract

School sexual harassment (SH) is defined as unwelcome behavior of a sexual nature that interferes with a student's ability to learn. There is an important need for schools to assess the prevalence of SH and its relation to school climate to guide intervention efforts. This study investigated three research questions: (a) Is there psychometric support for a 4-item multilevel measure of SH? (b) What is the prevalence of SH in a statewide high school sample, and how does SH vary across gender, grade level, race/ethnicity, and socioeconomic status? (c) Is an authoritative school climate—characterized by strict but fair discipline and supportive teacher-student relationships—associated with lower levels of SH for students? A statewide sample of high school students (N = 62,679) completed a school climate survey that included a new 4-item measure of SH. Results of a multilevel confirmatory factor analysis indicated good fit for a single SH factor at both student and school levels. A multiway analysis of variance demonstrated the high prevalence of SH and variations across demographic groups. Multilevel hierarchical regression analyses indicated that an authoritative school climate accounted for 5.7% of the student-level variance and 38.3% of the school-level variance in SH scores. Routine assessment of SH can help school psychologists bring attention to this under-recognized problem.

Keywords: sexual harassment, measurement, authoritative school climate, disciplinary structure, student support

Impact Statement

Sexual harassment is an important national concern that has not been adequately recognized in high schools. Approximately 38% of high school students in a large statewide sample reported at least one incident of sexual harassment in the past year, with differences across gender, grade level, race/ethnicity, and socioeconomic status. School psychologists can bring attention to the problem and advocate routine assessment of sexual harassment with a 4-item scale. An authoritative school climate is associated with lower levels of sexual harassment.

Authoritative School Climate and Sexual Harassment: A Cross-sectional Multilevel Analysis of Student Self-Reports

School sexual harassment (SH) is defined by the U.S. Department of Education (ED) as any unwelcome behavior of a sexual nature that interferes with a student's ability to learn, study, work, or participate in school activities. SH can be verbal (e.g. unwanted sexual humor, homophobic slurs), nonverbal (e.g. unwanted written sexual communications, gestures), or physical (e.g. unwanted sexual touching, kissing; USED Office for Civil Rights, 2008). Evidence suggests that SH is prevalent in schools and associated with negative outcomes of student health and well-being (Eom, Restaino, Perkins, Neveln, & Harrington, 2015; Gruber & Fineran, 2016). Schools have a legal obligation to stop SH when it is severe enough to interfere with learning (Title IX).

School psychologists should encourage routine assessment of the prevalence of SH in their schools. Such an assessment should meet high psychometric standards yet be brief enough that it can be incorporated into routine school climate measures. School climate is broadly defined as the quality of school life that reflects the norms, goals, values, and practices of a school (Cohen, McCabe, Michelli, & Pickeral, 2009). Extensive research demonstrates that school climate has a substantial association with various types of peer victimization (Bradshaw, 2015; Guerra, Williams, & Sadek, 2011). While there is some evidence supporting the association between school climate and SH victimization, further study is needed to understand the nature and prevalence of SH across students and schools of varying demographics (Gruber & Fineran, 2016). The focus of this study is on peer-to-peer SH in schools. Student-to-adult and adult-to-student SH, while important, are beyond the scope of this study.

Measuring School Sexual Harassment

In the most recent national survey of peer-to-peer SH in schools, the American Association of University Women (AAUW) found that 48% of adolescents experienced one of 10 types of SH in the school year. These rates differ from those reported in smaller-scale, regional samples, such as a study by Eom and colleagues which found that 59% had experienced one of six different types of SH over the past year (Eom et al., 2015).

It is typical for studies of school SH to survey students about how often they have experienced verbal SH, physical SH, and spreading of sexual rumors. For example, the 2011 AAUW survey asked students about 10 different harassment behaviors, such as (a) having someone make unwelcome sexual comments, jokes, or gestures in person; (b) being touched in an unwelcome sexual way; and (c) having someone spread unwelcome sexual rumors about you. They found that students were more likely to report experiencing non-physical harassment (33%) than being touched in an unwelcome sexual away (8%; AAUW, 2011).

Demographic Differences

There is some evidence that rates of SH differ across gender, age, race/ethnicity, and socio-economic status (SES). Studies on the prevalence of SH consistently report that girls experience more SH than boys (AAUW 1993; 2001; 2011). For example, in the 2011 AAUW study, 56% of girls reported experiencing SH, as compared to 40% of boys.

With respect to age, studies generally suggest that school SH begins in early adolescence and increases through adolescence. At the high school level, students in all grades report SH experiences, although studies are mixed on grade trends (AAUW, 2001; 2011).

Racial/ethnic differences in prevalence were also noted in some studies (AAUW, 2001; 2011; Espelage, Hong, Rinehart, & Doshi, 2016). In 2001, the AAUW found that African

American girls were more likely to report unwelcome touching (67%) as opposed to Hispanic and White girls (51% for each; AAUW, 2001). However, in 2011 the AAUW found no significant differences in prevalence among racial/ethnic groups, though this may have been due to having few African American and Hispanic students in their sample (AAUW, 2011). Additional research is needed to detect potential racial/ethnic differences in SH victimization.

In 2011, the AAUW found that students from high- versus low-income households were equally likely to report most types of SH, although lower-income students were more likely to report unwelcome touching (AAUW, 2011).

School Sexual Harassment Measures

The majority of studies of school SH use items from the AAUW national surveys. The 2001 AAUW study contained 14 items and the 2011 study contained 10 items (AAUW, 2001; 2011). The AAUW reports provide no information about psychometric properties of their measures, though there is some psychometric information reported in other studies that use these items. For example, Espelage, Basile, and Hamburger (2012) examined psychometric properties of the 14-item 2001 survey in a sample of middle school students. The scale was analyzed using exploratory factor analysis and results suggested the existence of a two-factor solution. Factor one (sexual harassment) contained nine items (e.g., making sexual comments, spreading rumors, and pulling at clothing of another student), and demonstrated internal consistency ($\alpha = .81$). Factor two (forced sexual contact) contained three items (i.e., forcing someone to kiss you, forcing someone to do something sexual besides kissing, and forcing someone to touch your private parts), and demonstrated internal consistency ($\alpha = .73$). Items that cross-loaded or had loadings lower than .30 on their primary factor loading were deleted. Gruber and Fineran (2016) reported a similar factor analysis of the AAUW 2011 items, but with somewhat different results.

The 14 sexual harassment items were factor analyzed using varimax rotation and results suggested the existence of a one-factor solution (sexual harassment) with high reliability of items (Cronbach's $\alpha = .90$). These studies examined SH at the individual level, but did not test it at the school level.

Studies using different items or fewer items report more limited psychometric results. For example, Clear and colleagues (2014) surveyed high school students using three items from the Sexual Experiences Questionnaire (SEQ; Fitzgerald, Magley, Drasgow, & Waldo, 1999). Although the full-length SEQ (versions range from 23 to 26 items) demonstrated good psychometric properties (Fitzgerald et al., 1999; Ormerod et al., 2008), the only psychometric information reported for the three items used by Clear and colleagues was moderate internal consistency (Cronbach's $\alpha = .66$; Clear et al., 2014). In conclusion, there is a need for a brief SH scale that can be used at both student and school levels with good psychometric properties.

School Climate and Sexual Harassment

School climate is broadly defined as the quality of school life that reflects the norms, goals, values, and practices of a school (Cohen et al., 2009). A positive school climate is commonly acknowledged as a factor influencing school victimization, but there is little agreement on the composition or dimensional structure of school climate (Cohen et al., 2009; Cornell & Mayer, 2010). For example, past studies of the association between school climate and SH have operationalized positive school climate as school satisfaction and student academic performance (Gruber & Fineran, 2016), presence of school supports (Kosciw, Palmer, Kull, & Greytak, 2013), perceptions that one's school climate is not tolerant of SH (Ormerod, Collinsworth, & Perry, 2008), and positive perceptions of school policy, teacher support, and student participation in decisions (Attar-Schwartz, 2009).

Some studies report associations between SH experiences and school climate at the individual level, but not at the school level. For example, Gruber and Fineran (2016) found that SH experiences were associated with lower satisfaction with school and academic performance (Gruber & Fineran, 2016). Similarly, Kosciw et al. (2013) found that in a sample of sexual-minority adolescents, SH was associated with poorer academic outcomes and psychological well-being, but inclusion of school-based supports was associated with lower victimization rates and improved outcomes.

Some studies demonstrate associations between SH and school climate factors at the individual and school levels. For example, Ormerod et al. (2008) examined peer SH victimization, school climate, and student outcomes in a sample of girls and boys from seven high schools. For girls, at the individual level SH was associated with greater psychological distress, negative body image, and poorer perceptions of school safety. Similarly, perceptions that one's school climate is tolerant of SH (poor school climate) were associated with more negative body image, poorer perceptions of safety, and greater withdrawal from school. For boys, at the individual level SH was associated with negative body image. Poor climate perceptions were associated with greater psychological distress and withdrawal from school, and poorer self-esteem, health satisfaction, and perceptions of safety. At the school level, student perception of school climate was a significant predictor of increased SH (Ormerod et al., 2008).

Similarly, Attar-Schwartz (2009) examined peer SH victimization and school climate perceptions in a sample of 7th through 11th grade students in Israel. School climate was measured by three scales addressing perceptions of school policy, teacher support, and student participation in decision making. At the individual level, student perceptions of school climate explained 5.8% of the variance in reports of SH victimization, such that students with greater

perceptions of school climate reported less SH victimization. At the school level, school climate factors explaining an additional 5% of variance in school SH rates. Schools with greater average teacher support and school policy ratings had lower average SH victimization rates (Attar-Schwartz, 2009).

Authoritative School Climate Theory

Authoritative school climate theory proposes two critical components of positive school climate: high disciplinary structure (i.e., perception that rules are strict but fair), and high student support, (i.e. perception that students feel supported and respected by school personnel; Gregory & Cornell, 2009; Gregory et al., 2010)

Authoritative school climate is associated with a variety of positive outcomes for schools, particularly reduced student aggression and victimization. Gregory et al. (2010) found that in a sample of high school students and teachers, high structure and high support were associated with lower levels of peer victimization such as bullying, theft, and property damage. Similarly, Cornell, Shukla, and Konold (2015) found that higher structure and support were associated with lower student and school level victimization. Higher disciplinary structure was associated with lower levels of teasing and bullying, bullying victimization, theft, and property damage. Higher student support was associated with less teasing and bullying, theft, and property damage (Cornell et al., 2015).

Furthermore, Gregory, Cornell, and Fan (2012) found that high structure and high support were associated with less victimization of teachers by students and high support was associated with fewer threats made by students against staff (Gregory et al., 2012). Similarly, Berg and Cornell (2016) found that teachers in authoritative schools reported less student aggression and feeling safer and less distressed.

Present Study

There is need for schools to have access to a brief measure of SH that demonstrates good psychometric properties at both student and school levels so that it can be used in comprehensive climate surveys. A brief measure can be incorporated in longer school climate surveys and thereby generate greater awareness of sexual harassment and its relation to other aspects of school climate and student well-being. Furthermore, there is need for investigation into the prevalence of different types of SH across different demographic groups. Finally, substantial research linking authoritative school climate to other similar forms of peer victimization support an investigation of the association between authoritative school climate and SH victimization. The present study examined three research questions: (1) Is there evidence to support a 4-item multilevel measure of school SH? (2) What is the prevalence of SH in a statewide high school sample, and how does SH vary across student characteristics of gender, grade level, race/ethnicity, and SES? (3) Is an authoritative school climate associated with lower levels of SH for high school students at the individual and/or school levels? For the first question, we hypothesized that an analysis of our four SH items, derived from longer, widely used measures (AAUW, 2011; Espelage & Holt, 2001), would demonstrate support for a one-factor scale measuring student experiences of SH. Although four items cannot encompass the full range of sexual harassment behaviors, we constructed items that covered multiple forms of sexual harassment that would be most relevant to school settings. For the second question, we hypothesized that rates of SH would differ across demographic groups. For the third question, we hypothesized that students who view their school as supportive and fair would report less SH and that schools characterized by high structure and high support would have lower levels of SH.

Method

Sampling and Participants

The sample of schools was obtained from a statewide survey of Virginia high schools conducted in spring 2016 as part of the state's annual School Safety Audit program (Cornell et al, 2016). The school participation rate was 99% based on 320 out of 322 eligible high schools. This high rate was accomplished in cooperation with the Virginia Department of Criminal Justice Services and the Virginia Department of Education, which endorsed the study and encouraged participation. The study was approved by the University of Virginia Institutional Review Board.

Schools were given the option to either (a) invite all 9th through 12th graders to participate in the study (whole-grade option) or (b) randomly select 25 students from each grade to participate (random sample option). Schools choosing the random sample option were provided with a random number list for each grade (calibrated to the enrollment in each grade) along with instructions for selecting students by matching the random numbers to an alphabetical list of all students in that grade. Details of the selection process and response rate analyses are available in a technical report (Cornell et al, 2016).

Approximately 18% of schools selected the whole-grade option (Cornell et al, 2016). The schools that surveyed their whole grade tended to be smaller (mean enrollment = 944) than the schools that used random sampling (mean enrollment = 1,234), $t = 2.56$, $p < .05$. However, there were no statistically significant differences in the percentage of students eligible for free or reduced-price meals (FRPM) for schools using the whole grade option (FRPM = .38) versus the random sample (FRPM = .40), $t = 0.72$, $p = .47$. For urbanicity (i.e., urban, suburban, town, rural), there were no statistically significant differences as well, $\chi^2(3) = 4.30$, $p = .23$. All

students were eligible to participate except those unable to complete the survey because of limited English proficiency or an intellectual or physical disability. Surveys were administered anonymously online using Qualtrics software, and students completed the survey in classrooms with staff supervision using a standard set of instructions.

A multistage validity screening procedure dropped 6,272 (9.1%) of the participants for two reasons: (1) completion time was lower than an empirically derived cutoff of approximately six minutes (2.4%) and (2) students reported not answering truthfully on two screening items (6.7%). The time cutoff was derived from examination of the distribution of response times on prior administrations of this survey (Cornell et al, 2014). The first validity-screening item was "I am telling the truth on this survey" (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Students who answered *strongly disagree* or *disagree* were excluded from the sample. The second item was "How many of the questions on this survey did you answer truthfully?" (1 = *all of them*, 2 = *all but 1 or 2 of them*, 3 = *most of them*, 4 = *some of them*, and 5 = *only a few or none of them)*. Students who answered *some of them* or *only a few or none of them* were omitted from the sample. Previous research with middle and high school samples found that these items can identify students who give exaggerated reports of risk behaviors and endorse views of school conditions that are substantially more negative than other students (Cornell et al. 2012; Cornell, Lovegrove & Baly, 2014).

The racial/ethnic breakdown of the final sample was 54.5% White, 17.8% Black, 11.8% Hispanic, 5.8% Asian, 1.0% American Indian or Alaska Native, and 0.5% Native Hawaiian or Pacific Islander, with an additional 8.7% of students identifying their background as two or more races. Approximately 23.0% reported speaking a language other than English at home. The racial/ethnic breakdown of the final sample was similar to the demographic estimates for all full-

time students in the state, as estimated by the Virginia Department of Education. The racial/ethnic breakdown of students in the state for 2016-17 was 49.7% White, 22.6% Black, 6.8% Asian, 0.3% American Indian or Alaska Native, 0.2% Native Hawaiian or Pacific Islander, 5.3% two or more races, and 15.1% Hispanic of any race. It should be noted that the survey demographics were based on student self-report and the state demographics were based on parent reports to school authorities. In the survey sample, more students reported being White and belonging to two or more races than in the state records. The distributions of parental education and FRPM for the final sample are displayed in Table 1.

Measures

The Virginia Secondary School Climate Survey consisted of 94 questions about school climate characteristics and student experiences (Cornell et al, 2016). This study was concerned with a subset of items measuring SH experiences, perceptions of student support, and perceptions of disciplinary structure. The survey was administered online and completed anonymously.

Sexual Harassment. The SH scale consisted of four items (Cronbach's alpha = 0.78 in the current sample) derived from the AAUW's Sexual Harassment Survey (AAUW, 2011), as well as the University of Illinois Victimization Scale (UIVS; Espelage & Holt, 2001). To make the scale as brief as possible, each question covered multiple related forms of SH. Each question began with the root, "During the past 12 months how many times did another student …" The four items (see Figure 1) assessed student's experiences of: (a) multiple forms of unwelcome sexual comments or jokes, (b) sexual rumors being spread about them, (c) being repeatedly bothered to go out with someone, and (d) multiple forms of unwanted physical contact of a

sexual nature. Students responded to these items on a five-point Likert scale (1 = *never*, 2 = *once,* 3 = *twice*, 4 = *three times*, 5 = *Four or more times*).

Student support. The first dimension of authoritative school climate, supportiveness of teacher-student relationships, was measured with an eight-item scale. Konold et al. (2014) demonstrated psychometric support for this scale through multilevel confirmatory factor analysis. Each item was answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Representative items included "Most teachers and other adults at this school want all students to do well" and "There are adults at this school I could talk with if I had a personal problem" (range = 8-32, α = .86 in the current sample).

Disciplinary structure. The second dimension of authoritative school climate, perceived fairness and strictness of school discipline, was measured with a seven-item scale (Konold et al., 2014). Each item was answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Representative items included, "The adults at this school are too strict" and "Students are treated fairly regardless of their race or ethnicity" (range = 7-28, α = .79 in the current sample).

Covariates. Student demographic variables obtained from the survey included grade level, gender, race/ethnicity, and SES. SES was represented by parent educational level (1 = *did not graduate from high school*, 2 = *graduated from a high school*, 3 = *graduated from a two-year college or technical school*, 4 = *graduated from a four-year college*, 5 = *completed post-graduate studies*) and FRPM.

Analytic Strategy

Analyses were conducted in three phases. The first phase tested the hypothesized one-factor structure of the SH scale using Mplus 7.0. Horn's Parallel Analysis (HPA) was used to

identify the number of factors underlying the SH items, and the structure of the items was evaluated within a multi-level confirmatory factor analysis (MCFA). The quality of the resulting model was gauged with the Tucker-Lewis index (TLI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residuals ($SRMR_{between}$ and $SRMR_{within}$). The first two measures generally range between 0 and 1.0, with larger values reflecting better fit. Values of .90 or greater have been taken as evidence of good-fitting models (Hu & Bentler, 1999). By contrast, smaller RMSEA values are reflective of better-fitting models; values <.08 are considered reasonable and values >.10 are considered poor (Huang, 2016). SRMR indicates acceptable fit when values are below 0.10 and indicates good fit when values are below 0.05 (Cangur & Ercan, 2015).

The second phase examined the prevalence of different types of SH reported by students in the sample, as well as how prevalence rates differed across demographic groups. A multi-way analysis of variance (ANOVA) model was run using SPSS Statistics 24.0.

In the third phase, hierarchical multilevel regression investigated the association of SH with authoritative school climate (ASC). Two models were used to predict the prevalence of SH at the individual and school level: the first model included only covariates and the second model included covariates with the two constructs of ASC (student support and disciplinary structure). Higher scores on the continuous variables of student support and disciplinary structure indicated more authoritative climates. Statistical analyses were performed with Mplus 7.0 using a maximum likelihood estimator with robust standard errors (MLR).

Results

Descriptive statistics for student- and school-level variables are presented in Table 1. The first research question tested the hypothesized one-factor structure of the SH scale. All SH items

were moderately correlated with one another (*r*s = .35-.68, all *p*s < .001), and Horn's parallel analysis suggested the presence of a single factor. Results of a single factor MCFA analysis suggested good fit as gauged by the CFI (= .99), RMSEA (= .03), the TLI (=.98), the $SRMR_{between}$ (= .04), and $SRMR_{within}$ (= .01). Standardized factor loadings for the MCFA were large and statistically significant, ranging between .59 and 1.025 (Figure 1).

For the second research question, prevalence rates for the individual SH items are presented in Table 1. In the full student sample, 38.4% of students reported experiencing at least some type of harassment at least once in the past school year. Among students who experienced SH, 70.7% reported unwelcome sexual comments or jokes, 46.2% reported having sexual rumors spread about them, 42.4% reported being repeatedly bothered to go out with someone, and 34.3% reported unwanted physical contact of a sexual nature. In order to investigate differences in victimization rates across demographic groups, a multi-way ANOVA model examined the average sum of SH experiences across gender, race/ethnicity, grade level, parent education level, and FRPM (Table 2). In comparison to female students, male students reported less SH (F(1, 62,666) = 1918.022, p < .001). Students in younger grades reported experiencing more SH (F(3, 62,666) = 12.857, p < .001), as did students whose parents were more highly educated (F(4, 62,666) = 14.899, p < .001). Post-hoc Dunnett pairwise comparisons indicated that non-Hispanic White students reported lower SH scores (M = 5.76) in comparison to Hispanic students (M = 5.89, p < .001) and Other students (M = 6.23, p < .001). Non-Hispanic White students reported higher SH scores than Asian students (M = 5.03, p < .001) and Black students (M = 5.42, p < .001). There were no significant differences in SH between students who qualified or did not qualify for FRPM (F(1, 62,666) = 10.390, p = .306). Effect sizes for significant results were small, with η_p^2 values ranging from 0.001 to 0.03.

The third research question examined regression analyses testing the associations between ASC and SH (Table 3). Model 1 presents the relations among SH and all control variables at the student level (gender, grade level, FRPM, parent education, and race/ethnicity) and school level (percentage of students per school receiving FRPM, school size, percentage of White students per school). At the student level, the control variables explained 3.7% of the variance in SH. At the school level, the control variables explained 17.7% of the variance in SH.

Model 2 built on Model 1 by introducing the ASC predictors of student support and disciplinary structure. At the student level, support and structure explained an additional 5.7% of the variance in SH, with an overall explained variance of 9.4%. Higher levels of perceived support and disciplinary structure were associated with fewer reported SH victimization experiences. At the school level, support and structure explained an additional 38.3% of the between-school variance in SH, with an overall explained variance of 56% in the final between-school model. Approximately 1% of the of student-level variance in SH was accounted for by the school-level clusters (ICC=.009). High schools with higher support and higher structure had less reported SH than schools with lower support and structure. To provide a sense of the size of the differences in SH between groups, we compared schools that were 1 SD above the statewide mean with those that were 1 SD below the statewide mean for each of the school climate measures. The prevalence of sexual harassment was 34% in high-structure schools and 41% in low-structure schools. Similarly, the prevalence of sexual harassment was 36% in high-support schools and 41% in low-support schools. This indicates that high structure was associated with a 17% reduction in school SH (7 / 41 = 0.17) and high support was associated with a 12% reduction in SH (5 / 41 = 0.12) in the above-mentioned subset of schools.

Discussion

The current study focused on development of a 4-item scale that can be used to measure the prevalence of sexual harassment (SH) in high schools with limited cost of time. To our knowledge, this is the first such scale to demonstrate good psychometric properties at both the student and school levels. Schools have a compelling need to measure SH in order to increase awareness of student experiences of victimization and inform policies and prevention measures to ameliorate the problem. Psychometric support for the 4-item scale to measure student SH was demonstrated in a variety of ways, including good model fit and evidence of a single SH factor. Furthermore, other measures are substantially longer, such as the AAUW scale with versions ranging from 10 to 14 items (AAUW, 2001; 2011) and the SEQ (Fitzgerald et al., 1999) with versions ranging from 23 to 26 items. As a result, it provides schools with a convenient and brief tool for assessing potential SH problems. Schools are more likely to monitor SH if it can be incorporated in a longer survey. Furthermore, inclusion of a brief SH scale in longer surveys will help schools recognize the relations between SH and other aspects of school climate and student well-being.

School psychologists should be aware of the high prevalence of SH in high schools and bring this to the attention of school authorities and the staff as a whole. The current study found that 38.4% of students in our statewide high school sample reported experiencing some type of SH at least once in the past school year. Non-physical SH was the most common form (70.7%), though sexual rumors (46.2%), physical sexual contact (34.3%) and being repeatedly bothered to go out with someone (42.4%) were all common.

Consistent with the majority of other studies of SH (see for example, AAUW 1993; 2001; 2011), girls reported substantially more SH than boys on all four SH items. Students reported

less SH in older grades. Although previous studies with smaller and less diverse samples did not detect racial/ethnic differences, we found significant differences between all of the racial/ethnic groups in this study. However, the findings were complex and deserve further examination: Hispanic students and "Other" race students reported more SH than non-Hispanic White students, but Asian and Black students reported less SH than non-Hispanic White students. One unexpected finding is that students from higher-income households reported more SH than lower-income students. It should be noted that the effect sizes of these demographic differences were small, and therefore the results should be interpreted with caution.

The results extend previous findings that an authoritative school climate is associated with lower levels of peer victimization. High disciplinary structure and high student support were both associated with lower levels of student-reported SH experiences. These associations fit well into the theoretical basis of authoritative school climate theory. In schools where rules are strict (high structure) and school staff are supportive and willing to help students (high support), it is likely that school personnel would be more willing to intervene in SH situations and students would be more likely to turn to school personnel for help. Furthermore, it is probable that schools with high structure and high support also have cultures where peer victimization such as SH is not tolerated and would therefore be lower. The present study cannot demonstrate such causal effects and there may be bidirectional effects and other influences that were not measured.

At the student level, findings indicate that student's individual perceptions of higher structure and higher support are associated with fewer self-reported experiences of SH, controlling for student gender, grade level, race, and SES. These findings are consistent with results reported in other studies, which indicated that schools where students perceive that there are "clear and known rules against violence" (Attar-Schwartz, 2009, p. 412) and feelings that

"my teachers really care about me" (Gruber & Fineran, 2016, p. 119) have lower levels of SH. The magnitude of the individual-level effects is also comparable to previous studies. In our study, school climate (structure and support) explained 5.7% of the variance in SH, as compared to Attar-Schwartz (2009) who found that school climate (school policy, teacher support, and student participation) explained 5.8% of the variance in SH at the individual level. Though school climate was measured differently in these two studies, the findings suggest that there is a significant effect of school climate on individual SH experiences. The small size of this effect is likely due to the fact that there are many individual differences in student experiences that should also be considered in association with SH experiences, such as parent and peer influences and individual attitudes about harassment experiences. Furthermore, since many students report no SH experiences, the effects of school climate at the individual level may be limited.

On the other hand, school climate had a substantial association at the school level. School-level analyses demonstrated that schools with higher overall ratings of support and structure had lower reported rates of SH. The magnitude of these findings was substantial, explaining 38.3% of the variance in SH across schools. Previous studies of the ASC model have found comparable effects on other forms of peer harassment; for example, measures of authoritative school climate explained 34% of the variance in school-level bullying victimization rates in a statewide middle school sample (Cornell et al., 2015).

Limitations

The main limitation of this study is the correlational nature of our findings. Correlational findings are open to multiple interpretations, which leaves room for the possibility that there are bidirectional causal effects between school climate and SH victimization. It is possible that a more positive school climate (higher levels of structure and support) leads to lower levels of SH,

but it is also possible that levels of SH affect student perceptions of school climate (Ormerod et al., 2008). Future longitudinal and intervention studies would be beneficial to test how improvements to school climate affect SH.

Another limitation of this study is that all items are based on student self-report and share method variance. Although the validation of our 4-item scale showed good fit as a measure of student SH victimization, it would be beneficial to examine independent measures of SH that do not share method variance with the survey, such as cases reported to school authorities.

Another limitation is that our SH measure was constrained in length so that it could be included in a larger statewide survey. We recognize that a 4-item measure might not detect as high a prevalence of SH as measures with many more items. To help compensate for its brevity, we constructed items that included multiple forms of SH that would be most relevant to schools.

Finally, it is possible that SH is associated with climate-related variables that are not included in this analysis. For example, the model of school climate developed by the U.S. Department of Education has 13 components organized into three domains of engagement, safety, and environment (Bradshaw, Waasdorp, Debnam, & Johnson, 2014). Several of their components align with authoritative school climate theory, but future research could investigate other components as they relate to SH victimization. Future studies could explore other variables influencing the school climate-SH relationship, such as the extent and quality of student support services in the school. Nevertheless, our study controls for many student-level and school-level demographic variables in order to account for factors beyond the predictors of interest.

Implications

The psychometric properties of the 4-item SH scale suggest that it is a potentially valuable tool for school psychologists to use in school surveys and research. While most studies

have collected SH data using longer measures, a brief measure of SH has more practical value for routine use in school climate surveys.

Furthermore, these results indicate that the most common form of SH students experience is non-physical harassment, such that unwelcome comments/jokes/gestures contribute most to the overall rates of reported SH in our sample. This finding has implications for intervention and prevention in schools, as it illustrates that SH is not just sexual touching but rather a variety of different behaviors. Education about SH in schools should be comprehensive and incorporate many different types of experiences in order to foster understanding for both students and school personnel. We recommend that schools measure SH in order to increase awareness of this pervasive problem, lay the foundation for educational efforts, and evaluate intervention efforts. Information about the prevalence of SH can be shared with students, staff, and parents in order to increase awareness, stimulate discussion, and encourage reporting. It is likely that victims of SH will be more like to come forward and seek help when they realize that it is a common experience and that their schools and communities are concerned about it.

Studies of SH indicate that it is prevalent in schools and is associated with negative student outcomes (see for example Eom et al., 2015; Ormerod et al., 2008). However, examination of research literature and the National Registry of Evidence-Based Programs and Practices (NREPP) found few effective intervention or prevention programs specifically for SH in schools (Espelage, Low, Polanin, & Brown, 2013; NREPP; Taylor, Stein, Mack, Horwood & Burden, 2008). One program with some demonstrated effectiveness is Shifting Boundaries, a classroom-based (e.g. education sessions) and building-based (e.g. awareness posters) program for middle school students, which demonstrated 26% less SH victimization compared to a control group (Taylor, Stein & Burden, 2010; Taylor, Stein, Mumford, & Woods, 2013).

The results from this study suggest that authoritative school climate theory could inform future prevention programs to decrease student SH experiences. Given the demonstrated association between authoritative school climate and SH rates, it is possible that school climate interventions could contribute to school-wide efforts to reduce SH and enhance the effectiveness of existing educational programs. For example, students may know what SH is and be told to report it, but they might be less likely to come forward if they do not trust school authorities and policies or feel respected and treated fairly. Furthermore, it is possible that intervention programs addressing SH would be more effective in schools with more authoritative school climates. For example, in schools with high structure, it is likely that when students believe that school rules are clear and fairly enforced, then they will be more likely to comply with policies regarding school SH. Furthermore, if students feel that teachers and staff are supportive of them, then they may be more likely to engage in interventions, report SH experiences, and seek help after experiencing victimization. School psychologists and other school personnel should be cognizant of the way their policies, expectations, and relationships with students emulate an authoritative climate, taking care to offer help to students, encourage disclosure of victimization experiences, and demonstrate trust of and respect for students who do report victimization. School administrators should ensure that policies are appropriately created and enforced to identify, resolve, and prevent SH.

Conclusion

With the onset of the #MeToo movement in October 2017, our society has seen an outpouring of reports of SH in professional settings, signaling a cultural shift toward increased awareness of SH and support for those who report it (Camera, 2018). In response to heightened public awareness, there should be a greater focus on SH in schools, recognizing that the problem

of SH does not begin in adulthood but is clearly evident in adolescence. States are making legislative efforts to respond to the school SH problem—in 2018, the Virginia General Assembly mandated that Family Life curricula in elementary, middle, and high schools incorporate age-appropriate and evidence-based programs on personal privacy and personal boundaries, and established that "Any high school family life education curriculum offered by a local school division shall incorporate age-appropriate elements of effective and evidence-based programs on the prevention of dating violence, domestic abuse, sexual harassment, and sexual violence.…" We recommend that school psychologists help their schools to routinely assess student SH in order to identify problems, increase awareness among students, staff, and parents, and monitor the effectiveness of interventions. Furthermore, we suggest that generating a school climate where students feel respected and supported might be helpful in reducing SH. With increased efforts to monitor and intervene in SH victimization, schools can better provide safe and healthy learning environments for their students.

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Table 1.

Student Demographic Characteristics

	Students no SH[1] (n = 38,583)		Students with SH (n = 24,096)		Total (N= 62,679)	
	N	%	N	%	N	%
Gender						
Female	16,508	42.8%	15,612	64.8%	32,120	51.2%
Male	22,075	57.2%	8,484	35.2%	30,559	48.8%
Grade						
9th	10,258	26.6%	6,825	28.3%	17,083	27.3%
10th	9,880	25.6%	6,536	27.1%	16,416	26.2%
11th	9,588	24.9%	5,880	24.4%	15,468	24.7%
12th	8,857	23.0%	4,855	20.1%	13,712	21.9%
Race/Ethnicity						
White	20,467	53.0%	13,681	56.8%	34,148	54.5%
Black	7,485	19.4%	3,684	15.3%	11,169	17.8%
Hispanic	4,449	11.5%	2,926	12.1%	7,375	11.8%
Asian	2,629	6.8%	1,015	4.2%	3,644	5.8%
Other	3,553	9.2%	2,790	11.6%	6,343	10.1%
Parental Education						
No high school	2,894	7.5%	1,849	7.7%	4,743	7.6%
High school	10,686	27.7%	6,099	25.3%	16,785	26.8%
2 year or technical	5,445	14.1%	3,623	15.0%	9,068	14.5%
4 year	10,172	26.4%	6,339	26.3%	16,511	26.3%
Post-grad studies	9,386	24.3%	6,186	25.7%	15,572	24.8%
Sexual Harassment						
Unwelcome	-	-	17,032	70.7%	17,032	27.2%
Rumors	-	-	11,144	46.2%	11,144	17.8%
Touch	-	-	8,258	34.3%	8,258	13.2%
Bother	-	-	10,220	42.4%	10,220	16.3%

Note. [1]Students no SH refers to students who students who indicated "never" on all of the 4 SH items, as compared to those who scored at least "once" on any of the 4-items (Students with SH)

Table 2.

ANOVA for Sexual Harassment and Demographic Variables

	F	*p*	η_p^2
Main effects			
Gender	1918.780	< .001	.030
Grade	12.966	< .001	.001
Race/ethnicity[1]	116.888	< .001	.007
White vs. Black	-	< .001	-
White vs. Hispanic	-	< .001	-
White vs. Asian	-	< .001	-
White vs. Other	-	< .001	-
Parent Education[2]	15.121	< .001	.001
FRPM[2]	10.3901	.306	.000

Note. [1]Post hoc analysis of Dunnett's Pairwise Comparison for White students versus Hispanic, Black, Asian, and Other. [2]SES measured by highest level of either parent education and whether students qualified for free/reduced price meals

Table 3.

Standardized (STDy) Regression Coefficients for 320 High Schools

Predictors	Sexual Harassment			
	Model 1		Model 2	
Student-level				
Male	-0.345	***	-0.328	***
Grade Level	-0.017	***	-0.026	***
FRPM	-0.018		-0.017	
Parent Education	0.004		0.016	***
Hispanic	0.078	***	0.048	***
Non-Hisp Black	-0.129	***	-0.17	***
Non-Hisp Asian	-0.182	***	-0.147	***
Non-Hisp Other	0.144	***	0.08	***
Support	-		-0.198	***
Structure	-		-0.31	***
R^2	0.037		0.094	
ΔR^2	-		0.057	
School-level				
FRPM	0.971		0.904	*
School-size	<.001	**	<.001	*
%White	-0.408		0.122	
Support			-3.118	*
Structure	-		-2.005	*
R^2	0.177		0.56	
ΔR^2	-		0.383	

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

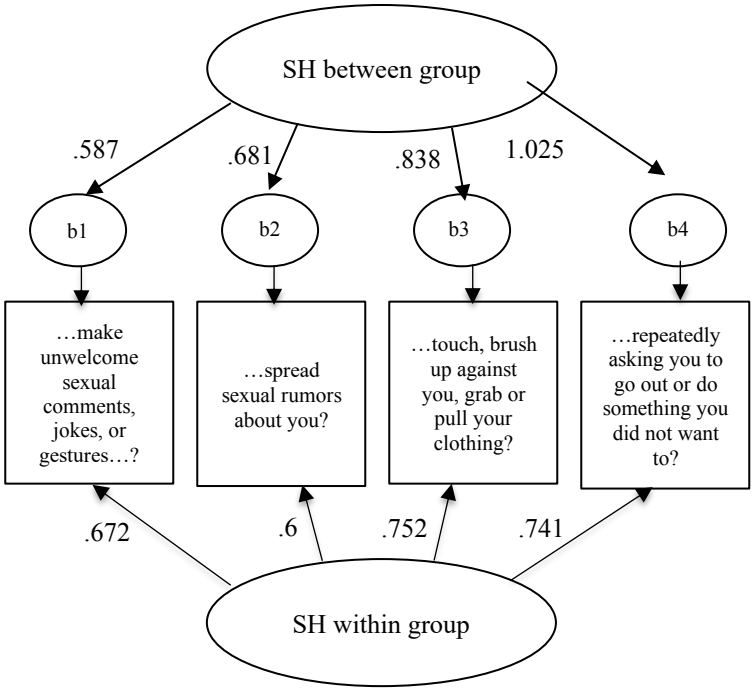

Figure 1.

Multilevel confirmatory factor analytic model for SH scale.

Manuscript Two

Associations of Bullying and Sexual Harassment with Student Well-Being Indicators

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Abstract

Objective. Although both school bullying and sexual harassment have been widely studied, there is little research comparing their prevalence and impact within a single sample. The present study investigated three research questions: (1) What is the prevalence of bullying compared to sexual harassment in high school, and how does prevalence differ across gender, grade, race/ethnicity, and socioeconomic status? (2) How is bullying associated with student well-being indicators, as compared to sexual harassment? (3) What is the association of just a single experience of sexual harassment with student distress? ***Method.*** A statewide survey of 85,750 students (grades 9-12) in 322 high schools reported how many times in the past school year they had experienced different types of bullying and sexual harassment. Participants also reported about mental health, risk behaviors, academic achievement, student engagement, and feelings of safety. ***Results.*** Sexual harassment was slightly more prevalent than bullying, but both demonstrated meaningful associations with student well-being indicators. Even a single experience of sexual harassment was associated with higher student distress, with experiences of sexual rumors being the most distressing. ***Conclusions.*** Researchers should be aware that bullying and sexual harassment are prevalent in schools and associated with negative well-being indicators. Attention to either alone would not yield an adequate assessment of adolescent victimization experiences, and prevention efforts should consider both forms of aggression in order to provide safer, healthier learning environments for students.

Keywords: sexual harassment, bullying, mental health, risk behaviors, academics

Associations of Bullying and Sexual Harassment with Student Well-Being Indicators

In 1999, two landmark events shifted the course of school victimization research and policy (Cornell & Limber, 2015). One was the shooting at Columbine High School, which drew attention to the problem of bullying in schools. The second was the Supreme Court case Davis v. Monroe County Board of Education (1999), which found school officials responsible for failing to stop sexual harassment among their students. These events helped stimulate a surge of research on bullying and sexual harassment (Gruber & Fineran, 2016; Hymel & Swearer, 2015). Both fields of study yielded substantial evidence that student victimization is associated with distress (Gruber & Fineran, 2008; Gruber & Fineran, 2016). However, the large bodies of literature on school bullying and sexual harassment take different perspectives on what makes peer aggression harmful. Furthermore, correspondingly different survey questions have generated different estimates of their prevalence and impact on student well-being, as well as separate forms of intervention and separate movements calling for more attention to the problem (Turner, Finkelhor, Shattuck, Hamby & Mitchell, 2015). The purpose of the present study was to compare both constructs within a single sample to better understand the extent of each problem and compare their associations with student well-being.

Bullying is typically defined in research as aggression characterized by intentionality, repetition, and imbalance of power (Hymel & Swearer, 2015). In contrast, sexual harassment in a school context is defined as unwelcome behavior of a sexual nature that is sufficiently severe that it interferes with students' educational opportunities, with no requirement for a power imbalance (AAUW, 2011). Psychological theories of bullying contend that the content of bullying, such as whether a student is bullied about personal appearance, demographic characteristics, abilities, or other reasons, is secondary to the power imbalance (Hymel &

Swearer, 2015). Proponents of this theory argue that the imbalance of power in bullying increases the harmfulness of the experiences for victims by making them feel more afraid, isolated, and powerless, and as a result produces greater distress than aggression without power imbalance (Turner et al., 2015). From this perspective, sexual harassment is simply another form of bullying where the content happens to be sexual in nature.

Sexual harassment researchers contend that sexual harassment is a distinct experience from bullying and that the sexual content of the experience is critical. Unlike other forms of aggression, it is rooted in hegemonic masculinity, a societal practice that creates culturally-sanctioned roles of gender and sexuality and subordinates certain groups (females, sexual minorities; Gruber & Fineran, 2008). From this theoretical perspective, sexual harassment is psychologically harmful because it compounds the shame, self-blame, and fear that is already disproportionately experienced by these groups. Studies addressing this theory have found that students who experienced sexual harassment reported greater distress than those who experienced non-sexual victimization (Turner et al., 2015).

There are compelling research and policy reasons to compare bullying and sexual harassment in the same sample. The largely non-overlapping research literatures on bullying and sexual harassment yield no insight into their relative prevalence or their comparative associations with student well-being. Sexual harassment researchers argue that sexual harassment has received less attention than bullying in schools and needs greater attention in policy and research (Gruber & Fineran, 2008). From a school policy perspective, school authorities need to know whether their policies regarding bullying adequately address the problem of sexual harassment among adolescents.

Relations Between Bullying and Sexual Harassment

Comparative research is needed to clarify whether sexual harassment is another form of bullying or is an especially harmful form of aggression distinguishable from bullying. There are gaps in understanding whether they have overlapping prevalence (i.e., students who report one also report the other) or whether one is more prevalent than the other. There is also a gap in knowing whether one is associated with poorer outcomes or different kinds of outcomes. Research suggests that there are associations between bullying and sexual harassment victimization and perpetration. Pepler and colleagues found that sexual harassment perpetration was positively associated with bullying perpetration among students (Pepler et al., 2006). Similarly, Espelage, Basile, and Hamburger (2012) reported that homophobic teasing (a type of victimization that could be considered bullying and sexual harassment) was predictive of later sexual harassment perpetration. These studies were limited to relatively small samples of primarily middle school students rather than older adolescents. They did not examine prevalence and overlap in the occurrence of bullying and sexual harassment.

Research on high school bullying and sexual harassment is especially important because they may be more damaging to adolescent social identity and they appear to be less responsive to intervention than middle school bullying and sexual harassment (Bellmore, Huang, Bowman, White, & Cornell, 2016). One reason that bullying intervention studies demonstrate limited success in older adolescent samples (Espelage & Holt, 2012) might be that bullying programs fail to recognize the significant role of sexual harassment in adolescence (Bellmore et al., 2016). The conceptual overlap in bullying and sexual harassment suggests a need to further examine relations between the two in a large, diverse sample to better understand their prevalence and relative harmfulness for students. It is important to address gaps in the literature to better

understand potential relations between bullying and sexual harassment and their associations with student well-being, and to give school authorities the information necessary to address both problems among adolescents.

Prevalence of Bullying and Sexual Harassment

Studies of national samples suggest that bullying and sexual harassment are highly prevalent in high schools, but these studies typically examined only bullying or only sexual harassment, so that comparisons were not possible. For example, the School Crime Supplement of the National Crime Victimization Survey (SCS-NCVS) found that 27.8% of a nationally representative sample of 12-18-year-old students reported experiencing bullying in the past school year (Lessne & Harmalkar, 2013).

The most recent national study of sexual harassment, conducted in 2011 by the American Association of University Women (AAUW), found that 48% of a nationally representative sample of 7th–12th graders reported at least one experience of sexual harassment over the past school year (AAUW, 2011). Previous sexual harassment prevalence studies predate the 2017 Me Too movement, a movement against sexual victimization that has raised national awareness of sexual harassment and encouraged victims to come forward (Zacharek, Dockterman, & Edwards, 2017). Thus, it is useful to examine more recent prevalence of sexual harassment in schools, and potential overlap with bullying.

Gruber and Fineran (2016) compared prevalence of bullying and sexual harassment in a single sample. Though the sample was limited to 761 students from two middle and three high schools, they found that bullying (53%) was reported more frequently than sexual harassment (39%). This 2016 study did not provide adequate breakdowns of prevalence by gender, grade, race/ethnicity, or socioeconomic status (SES). Furthermore, it did not examine rates of students

who experienced bullying only, sexual harassment only, or both. Finally, prevalence rates were based on a high threshold; students were defined as bullied or harassed if they reported experiencing three or more different types of bullying or sexual harassment at least "a few times." In contrast, evidence suggests that even a single incidence of bullying or sexual harassment can be harmful (Olweus, 2013).

Demographic Comparisons. It is important to identify groups at greatest risk for bullying and sexual harassment and in particular whether risk differs as a function of gender, grade, race/ethnicity, and SES. Psychological theories of both bullying and sexual harassment described above suggest that students in minority groups could be disproportionately victimized (e.g., because minority groups experience a social power imbalance and female students are vulnerable to hegemonic masculinity). Furthermore, membership in a demographic minority group might magnify the potential impact of victimization (e.g. for a racial/ethnic minority student, being bullied by a White student about their demographic characteristics could compound feelings of isolation and powerlessness that the student already feels in their majority-White school; Turner et al., 2015).

Males and females have tended to report experiencing bullying at similar rates, though different types of bullying may be more common for one gender vs. the other (e.g. physical bullying more common for males; Lessne & Harmalkar, 2013). In contrast, studies of sexual harassment have reported consistently that females experience more sexual harassment than males (AAUW, 2011). Regarding age, bullying tends to begin in elementary school and peak in early adolescence, with physical victimization decreasing with age and verbal bullying remaining relatively constant (Lessne & Harmalkar, 2013). On the other hand, sexual harassment begins in early adolescence and increases through adolescence (AAUW, 2011).

Some studies reported similar bullying rates across race/ethnicity (Zhang, Musu-Gillette & Oudekerk, 2016) while others reported differences, such as African American students experiencing more bullying (Goldweber, Waasdorp & Bradshaw, 2013). In 2001, the AAUW found racial/ethnic differences for sexual harassment, such as African American females being more likely to be touched in a sexual way (67%) compared to Hispanic and White females (51% each; AAUW, 2001). For socioeconomic status (SES), a meta-analysis of 28 bullying studies with SES measures (e.g. household income), found bullying victims were more likely to come from low-SES households (Tippett & Wolke, 2014).

Correlates of Bullying and Sexual Harassment

Individually, there is evidence of associations between bullying and negative socio-emotional correlates like poor mental health, suicidality, and drug use, and academic correlates like decreased school engagement and poor academic performance (Lacey & Cornell, 2013; Tharp-Taylor, Haviland & D'Amico, 2009). Though there are comparatively fewer studies of sexual harassment, socio-emotional correlates such as poor mental health (Eom, Restaino, Perkins, Neveln & Harrington, 2015) and academic correlates such as trouble studying (AAUW, 2011) have also been documented.

Studies by Gruber and Fineran (2008, 2016) compared socio-emotional and academic indicators associated with bullying and sexual harassment within the same samples. In the 2008 study, sexual harassment was more strongly associated than bullying with all five indicators (poor self-esteem, mental health, physical health, trauma symptoms, and substance abuse; Gruber & Fineran, 2008). In the 2016 study, sexual harassment was also more strongly associated with academic indicators (perceptions of school satisfaction, teacher support, school withdrawal, and grades; Gruber & Fineran, 2016). One limitation of the 2016 study is that

bullying was not defined for students, and items included examples of peer conflict that may not have involved a power imbalance, a key component of conventional bullying definitions.

Thresholds for Bullying and Sexual Harassment

Another gap in the field is to determine whether a *single* incident of victimization is associated with poor well-being. Stakeholders can better understand the potential harmfulness of bullying and sexual harassment by considering the threshold of each type of victimization that is associated with student distress. Understanding this threshold can help individuals be attuned to student experiences of victimization severe enough to warrant attention and intervention by school authorities. Solberg and Olweus (2003) found that a frequency of being bullied "2 or 3 times a month" was a reasonable lower-bound cutoff point, as students at or above this threshold differed in socio-emotional outcomes from those who were bullied less frequently. The distinct policy definition of sexual harassment suggests the need for a different threshold analysis. In Davis v. Monroe (1999), the Court specified that "behavior must be serious enough to have the systemic effect of denying the victim equal access to an education program or activity" and "a single instance of severe one-on-one peer harassment could, in theory, be said to have such a systemic effect" (pg. 19). Since behaviors need not be repeated to constitute sexual harassment, this raises the question of how much impact a single incident of sexual harassment might have on students.

Present Study

The present study adds to existing research literature on both bullying and sexual harassment. Historically, bullying research has been more prevalent than sexual harassment research, and has failed to recognize the potential overlap and co-occurrence of both. Although theoretical perspectives offer arguments for the unique harmfulness of bullying and sexual

harassment, there is little evidence as to whether one is more harmful or deserving of attention than the other. There is a need to understand the associations of both forms of victimization with adolescent well-being in order to gain a more comprehensive assessment of their peer victimization experiences (Espelage & Holt, 2012).

The first aim of the present study was to assess the prevalence of both bullying and sexual harassment in a large, statewide high school sample and to investigate how prevalence differs across gender, race/ethnicity, grade level, and SES. It was hypothesized that both bullying and sexual harassment would be prevalent in high schools, and that their rates would differ across demographic groups. Because there is a dearth of diverse, large-scale studies investigating bullying and sexual harassment within the same sample, it is important to compare prevalence in order to understand the extent of both problems. Furthermore, it is important to examine demographic differences in order to identify groups that may be vulnerable to one or both types of victimization.

The second aim was to compare the associations of bullying and sexual harassment with negative student well-being indicators. It was hypothesized that both bullying and sexual harassment would be associated with negative indicators including academic achievement, student safety, suicidality, mental health, and substance use, and that students who experienced both bullying and sexual harassment would report poorer well-being than other students.

The third aim was to test the definitional threshold of sexual harassment by examining the potential effect of a single sexual harassment experience on student well-being. It was hypothesized that even a single experience of sexual harassment would be associated with increased distress. Since behaviors need not be repeated to constitute sexual harassment under federal policy, it is beneficial for researchers and school personnel to examine this threshold.

Method

Sampling and Participants

The sample was obtained from a statewide survey of Virginia high schools conducted in spring 2018 as part of the state's annual School Safety Audit program (Cornell et al., 2018). The school participation rate was 99% (322 of 324 eligible high schools). This high rate was accomplished in cooperation with two state agencies, the Virginia Department of Criminal Justice Services and the Virginia Department of Education (VDOE), which endorsed the study and encouraged participation. This study was approved by the University of Virginia Institutional Review Board.

Schools were given the option to either (a) invite all 9th through 12th graders to participate (whole-grade) or (b) randomly select 25 students from each grade to participate (random sample). Schools who chose the random sample option were provided with a random number list for each grade (calibrated to enrollment in each grade) and instructions for selecting students by matching the random numbers to an alphabetical list of all students in that grade. Details of the selection process and response rate analyses are available in a technical report (Cornell et al., 2018). All students were eligible to participate except those unable to complete the survey because of limited English proficiency or an intellectual or physical disability. Surveys were administered anonymously online using Qualtrics software, and students completed the survey in classrooms under teacher supervision using a standard set of instructions (Cornell et al., 2018).

Approximately 29% of schools selected the whole-grade option. Schools that surveyed their whole grade tended to be smaller (mean enrollment = 931) than schools that used random sampling (mean enrollment = 1,312), $t = -4.19$, $p < .001$. Whole-grade and random-sample

schools did not differ significantly in the percentage of students eligible for free or reduced-price meals (FRPM; a commonly used proxy for student SES; Cornell et al., 2018).

A multistage screening procedure dropped 7,420 (8.0%) student surveys for two reasons: (1) completion time was lower than an empirically determined cutoff of approximately six minutes (0.4%; see masked citation for more information) or (2) students reported not answering truthfully on either of two validity screening items (7.6%). Information on the validity screening process and supporting research is available in a technical report (Cornell et al., 2014).

The final analytic sample consisted of N = 85,750 (52.2% female) participants in the ninth (27.4%), tenth (26.3%), eleventh (24.4%), and twelfth (21.9%) grades. The racial/ethnic breakdown was 52.5% White or Caucasian, 15.1% Black or African American, 11.8% Hispanic, 4.5% Asian, 0.5% American Indian/Alaska Native, and 0.3% Native Hawaiian/Pacific Islander, with an additional 13.5% of students identifying as two or more races. Approximately 23.8% reported speaking a language other than English at home. For students' parental education, 21.8% completed postgraduate studies, 24.5% completed four-year college, 11.6% completed two-year college or technical education, 25.6% graduated from high school, 7.3% did not graduate from high school, and 9.1% did not know. Thirty-two percent of students (32.1%) were eligible for FRPM at school.

Demographic data of the analytic sample was fairly representative of the breakdown in state records. State records indicated that the average percentage of students eligible for FRPM in participating schools was 43.2%, with a range of 2% to 100%. School enrollments were approximately 57.8% White or Caucasian, 21.8% Black or African American, 11.1% Hispanic, 4.6% Asian, 0.2% American Indian, 0.1% Hawaiian, and 4.2% two or more races.

Measures

The [masked state] Secondary School Climate Survey consisted of approximately 100 questions about school climate characteristics and student experiences (see Cornell et al., 2018). The present study concerned a subset of items measuring bullying and sexual harassment experiences, as well as mental health, risk behaviors, and educational indicators.

Bullying. To measure bullying, students were given a definition derived from Olweus (1996): *Bullying is the repeated use of one's strength or popularity to injure, threaten, or embarrass another person on purpose. Bullying can be physical, verbal, or social. It is not bullying when two students who are about the same in strength or popularity have a fight or argument.* Students responded to a four-item scale (Cronbach's $\alpha = .81$) asking how many times in the past school year they had experienced different types of bullying, each of which was specifically defined: physical ("repeatedly hitting, kicking, or shoving someone weaker on purpose"), verbal ("repeatedly teasing, putting down, or insulting someone on purpose"), social ("getting others repeatedly to ignore or leave someone out on purpose"), and cyber bullying ("using technology (cell phone, email, Internet, etc.) to tease or put down someone"). Students responded to these items on a four-point Likert-scale (1 = *never*, 2 = *once or twice,* 3 = *about once per week,* and 4 = *more than once per month*). These bullying questions have been used in a series of validation studies (e.g., Huang & Cornell, 2015), demonstrating that this measure corresponds to peer and teacher nominations of bullying victims (Baly, Cornell, & Lovegrove, 2014) and is correlated with depression, negative school perceptions, and lower grade point averages (Branson & Cornell, 2009). Bullying items were averaged into student mean scores.

Sexual Harassment. The sexual harassment scale consisted of four items ($\alpha = .78$) derived from the AAUW's sexual harassment survey (AAUW, 2011) and the University of

Illinois Victimization Scale (UIVS; Espelage & Holt, 2001). The scale was limited to four items in order to accommodate stakeholder requirements for a brief scale. Although four items cannot encompass the full range of sexual harassment behaviors, items covered several forms of sexual harassment that would be most relevant to school settings. Each question began with the root, "During the past 12 months how many times did another student …", and assessed student's experiences of: (a) unwelcome sexual comments, jokes, or gestures, (b) sexual rumors being spread about them, (c) being repeatedly bothered to go out with someone, and (d) unwanted physical contact of a sexual nature. Students responded to these items on a five-point Likert scale (1 = *never*, 2 = *once,* 3 = *twice*, 4 = *three times*, 5 = *Four or more times*). Results of a multilevel confirmatory factor analysis (CFA) indicate good fit for the sexual harassment scale (CFI = .993; TLI = .980; RMSEA = .025). Standardized factor loadings linking each item to an overall sexual harassment scale score were significant at the individual level (ranging from .6 to .75, all *p*s < .001), and at the school level (ranging from .59 to 1.025, all *p*s < .001; Crowley et al., 2019). Sexual harassment items were averaged so each student had a mean score.

Safety and Engagement. Perceptions of safety were measured by one item, "I feel safe at this school," answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Engagement in school was measured with a six-item scale that included two factors: cognitive engagement (investment in learning; $\alpha = .70$) and affective engagement (positive feelings towards school; $\alpha = .88$). Three items measured cognitive engagement (e.g. "I want to learn as much as I can at school") and three items measured affective engagement (e.g. "I am proud to be a student at this school"). All items were answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly*

agree). Multilevel CFAs supported the use of this scale at the student and school levels (Konold et al., 2014). Engagement items were averaged so each student had a mean score.

Academics. Student academics were measured by self-reported grades and future academic aspirations. The grade item asked, "What grades did you make on your last report card?" with a seven-point Likert scale (1 = *mostly A's*, 2 = *mostly A's and B's*, 3 = *mostly B's*, 4 = *mostly B's and C's*, 5 = *mostly C's*, 6 = *mostly C's and D's*, 7 = *mostly D's and F's*). The academic aspirations item asked, "How far do you expect to go in school?" with a six-point Likert scale (ranging from 1 = *I do not expect to graduate from high school* to 6 = *I expect to complete post-graduate studies such as a master's degree or doctoral degree*). Several studies support the use of these academic items (Cornell, Shukla, & Konold, 2016; Jia, Konold, & Cornell, 2016).

Risk Behaviors. Self-reported substance use and suicidality were measured using items based on the Youth Risk Behavior Survey (Kann et al., 2016). Substance use was measured by two items, "During the past 30 days, on how many days did you have at least one drink of alcohol?" with a seven-point Likert scale (ranging from 1 = *0 days* to 7 = *All 30 days*); and "During the past 30 days, how many times did you use marijuana?", with a six-point Likert scale (ranging from 1 = *0 times* to 6 = *40 or more times*). Student suicidality was measured by one item, "During the past 12 months, how many times did you actually attempt suicide?," with a five-point Likert scale (ranging from 1 = *0 times* to 5 = *6+ times*). These items were dichotomized for analyses due to the high distribution of students who endorsed no substance use and/or suicide attempts.

Mental Health. The student mental health scale consisted of four items measured with a four-item scale (α = .84) derived from the Orpinas (1993) depression scale. Student were asked

"In the last 30 days, how often…": (a) "were you sad?," (b) "were you grouchy, irritable, or in a bad mood?," (c) "did you feel hopeless about the future?," (d) "did you have difficulty concentrating on your school work?." Students responded to these items on a five-point Likert scale (1 = *never*, 2 = *seldom,* 3 = *sometimes*, 4 = *often*, 5 = *always*). Items were averaged to create student mean scores.

Covariates. Analyses included four demographics obtained from the survey: grade level (9th, 10th, 11th, 12th; continuous), gender (male, female; binary categorical, male as referent group), race/ethnicity (White/Caucasian, Black/African American, Hispanic, Asian, Other; categorical dummy variables, White as referent group) and SES (one item asking whether students qualified for FRPM; binary categorical, 'No' as referent group). There is evidence that rates of bullying and sexual harassment vary across these demographic groups (AAUW, 2011; Lessne & Harmalkar, 2013).

Analytic Strategy

Analyses were conducted in three phases. The first phase examined the prevalence of different types of sexual harassment and bullying across demographic groups. Item-level frequencies and multivariate analysis of variance (MANOVA) models used SPSS Statistics 25.0.

In the second phase, hierarchical regression investigated the association of bullying and sexual harassment with eight student well-being indicators after accounting for covariates. For each of the eight dependent variables, four models were used: (1) only demographic covariates as predictors of each indicator, (2) covariates with the addition of bullying, (3) covariates with the addition of sexual harassment (without bullying), and (4) covariates with both bullying and sexual harassment. Linear regression was used for continuous indicators (mental health and student engagement). Binomial logistic regression was used for binary categorical indicators

(alcohol use, marijuana use, suicide attempts; coded 'Yes' or 'No,' 'No' as referent group). Ordinal logistic regression was used for non-binary categorical indicators (academic aspirations, grades, safety). All models included fixed effects to account for nesting of students within schools. Analyses were performed with Stata 15.1 using heteroskedastic-consistent standard errors. The variance explained for logit models is pseudo-R2 and should only be used for comparing within but not across indicators.

The second phase also compared the relative degrees of distress associated with experiencing neither bullying nor sexual harassment, only bullying, only sexual harassment, or both. An Overall Distress index (Cronbach's alpha = .68) was created by standardizing and combining all eight indicators into a single distress score. This index recognizes that students may experience distress in different ways with no expectation that all indicators cluster together as a scale (Streiner, 2003). Analysis of covariance (ANCOVA) was run using SPSS Statistics 25.0 to examine whether victimization category was associated with levels of distress, controlling for demographic covariates.

The third phase investigated the severity threshold of sexual harassment. Independent sample t-tests were run using SPSS Statistics 25.0 to examine the mean increase in distress associated with a single experience of each of the four types of sexual harassment.

Post-hoc power analyses were calculated using G*Power (Version 3.1; Faul, Erdfelder, Buchner, & Lang, 2009). Statistical power was calculated to be 100% for all analyses. For the first phase of analyses (MANOVA), the average effect size across groups was determined to be $\eta_p^2 = 0.008$, which can be estimated in a sample size of 85,750 with an alpha level of .05 100% of the time. For the second phase of analyses (regression), the average effect size (change in R^2) was determined to be $R^2 = .06$, which can be estimated in a sample of 85,750 with an alpha level

of .05 100% of the time. Within the second phase of analyses we also conducted an ANOVA comparing victimization categories. This analysis rendered an effect size for victimization category of $\eta_p^2 = 0.095$, which can be estimated in a sample of 85,750 with an alpha level of .05 100% of the time. For the third and final phase of the analyses (t tests), the average effect size was determined to be Cohen's d = 0.33, which can be estimated in a sample of 85,750 with an alpha level of .05 100% of the time.

Results

To investigate the first research question, Table 1 illustrates the prevalence of bullying and sexual harassment for females, males, and the total sample. The first hypothesis, that both bullying and sexual harassment would be prevalent and that rates would differ across demographic groups, was supported. Overall, females reported higher rates of bullying and sexual harassment than males. Within gender, bullying was more prevalent for males (33.4% bullied vs. 29.2% harassed), whereas sexual harassment was more prevalent for females (43.7% bullied vs. 51.3% harassed). For the full sample, 14.2% of students reported experiencing bullying only, 16.1% reported sexual harassment only, and 24.6% reported both. The Pearson product-moment correlation between bullying and sexual harassment was $r = .48$.

Table 2 depicts results of MANOVA models for bullying and sexual harassment demonstrating differences across gender, grade, race/ethnicity, and FRPM. There were significant differences in prevalence across all demographics for bullying and sexual harassment. Females ($n = 44,733$) reported experiencing more bullying and more sexual harassment than males ($n = 41,017$). Students in younger grades (n of grade 9s = 23,467, n of grade 10s = 22,555) reported more bullying and more sexual harassment than students in older grades (n of grade 11s = 20,935, n of grade 12s = 18,793). "Other" race students ($n = 13,745$) reported more bullying

and more sexual harassment than non-Hispanic White students (n = 45,030), but Asian (n = 3,852), Black (n = 12,965), and Hispanic (n = 10,158) students reported less bullying and less sexual harassment than non-Hispanic White students. Lower-SES students (n = 27,555) reported more bullying and more sexual harassment than higher-SES students (n = 58,195). Effect sizes were small (η_p^2 values from 0.001 to 0.035).

To examine the second research question, results of fixed effects regression models are depicted in Table 3. The second hypothesis, that both bullying and sexual harassment would be similarly associated with negative indicators and that students who experienced both bullying and sexual harassment would report poorer well-being than other students, was supported by the findings. For each indicator, Model 1 represents the relations between each indicator and all control variables at the student level (gender, grade level, race/ethnicity, and FRPM). Coefficients for these variables are not pictured in the table to conserve space. These variables explain a small yet significant amount of variance in each of the eight indicators.

Model 2a shows that bullying is a significant predictor for all eight indicators, with explained variances ranging from 0.1% for educational expectations to 11.2% for mental health. Model 2b also shows that sexual harassment is a significant predictor for all eight indicators, with explained variances ranging from 0.1% for educational expectation to 10.0% for mental health.

Model 3 shows that both bullying and sexual harassment are significant predictors for all eight indicators when entered simultaneously. Table 3 depicts the total variance explained for each full model, ranging from 0.1% for educational expectations to 14.4% for mental health. For the linear models, higher reports of bullying and higher reports of sexual harassment were associated with worse student-reported mental health and engagement. For the logit models,

higher reports of bullying and higher reports of sexual harassment were associated with greater odds of reporting alcohol use, marijuana use, and suicide attempts, as well as greater odds of having negative educational expectations, poor grades, and negative perceptions of safety. To explore potential interactions between bullying and sexual harassment, models with a bullying x sexual harassment product term produced very small changes in R2, with explained variances ranging from 0.00% ($p > .05$) for grades to 0.01% ($p < .001$). These results will not be discussed in detail; overall, they indicate an additive effect of the two forms of aggression, rather than a moderation effect.

Table 4 depicts results of a one-way ANCOVA examining whether there is a significant difference between reported distress for different victimization categories (neither, bullying only, sexual harassment only, both), controlling for student gender, grade, race/ethnicity, and SES. There was a significant effect of victimization category on reported distress. Students who experienced neither bullying nor sexual harassment ($M = -1.30$) reported significantly lower distress than those who experienced bullying only ($M = 0.26$) and sexual harassment only ($M = 0.13$), while those who experienced both bullying and sexual harassment ($M = 2.14$) reported the highest distress. Distress scores were standardized, so results indicate that, on average, students who experienced both bullying and sexual harassment reported distress scores 2.14 standard deviations above the mean.

To address the third research question, independent means t-tests examined whether there was an increase in mean distress for students who reported a single experience of each type of sexual harassment. The third hypothesis, that even a single experience of sexual harassment would be associated with increased distress, was supported. As indicated in Table 5, students who reported experiencing a single sexual harassment incident reported higher mean distress

scores than those who did not experience such victimization, and this was true for each type of sexual harassment. The largest observed effect was for experiencing a single incident of sexual rumors (n = 7,492, Cohen's d = 0.41), although all four items had small-to-medium effect sizes (comments n = 9,333, d = 0.19; touch n = 5,484, d = 0.37; bothered to date n = 5,976, d = 0.33).

Discussion

The present study is the first to conduct comparisons of the prevalence and overlap of both bullying and sexual harassment in the same sample, using a large and demographically diverse sample of high school students. The first goal of the present study was to assess the prevalence of both bullying and sexual harassment and to investigate how prevalence differs across demographic groups. Although studies by Gruber and Fineran (2008, 2016) in small samples of schools reported that bullying was substantially more prevalent than sexual harassment, the present study found that bullying and sexual harassment are comparably prevalent in high schools (38.8% bullied vs. 40.7% harassed). One difference between the two studies is that Gruber and Fineran measured bullying with broader peer aggression items (e.g., have one or more students…scared you, teased you, called you names, etc.) that might not involve the power imbalance that is intrinsic to bullying.

Previous studies have not adequately disaggregated prevalence rates of both constructs by gender, grade, race/ethnicity, and SES. It is notable in the present study that females reported more bullying (43.7% vs. 33.4%) and more sexual harassment (51.3% vs. 29.2%) than males. Sexual harassment was more prevalent than bullying for females and bullying was more prevalent than sexual harassment for males. These rates demonstrate comparable trends to those reported in other recent studies, such as the larger gender discrepancy in sexual harassment rates and the more similar rates of bullying (Lessne & Harmalkar, 2013). Our findings also offer

further insight into different victimization experiences of females and males. Females reported physical sexual harassment at nearly twice the rate of physical bullying, whereas males reported similar rates of both, indicating that girls' experiences of physical aggression in their schools are largely sexual in nature. Furthermore, although much attention is focused on sexual harassment of females, it should not be overlooked that a substantial percentage of males experience sexual harassment, and the emotional impact of harassment on boys may be different than for girls. Research on the socio-emotional struggles of males in society is underrepresented, potentially leading to misconceptions about male experiences of sexual harassment (Pollack, 2006).

The present study found small but significant differences between all racial/ethnic groups for both bullying and sexual harassment (AAUW, 2011). Students reported less bullying and sexual harassment in older grades, consistent with previous findings that aggression decreases as students mature (AAUW, 2011; Lessne & Harmalkar, 2013). Contrary to studies by Goldweber and colleagues (2013) and AAUW (2001), we found that African American students were less likely than White students to be bullied or harassed. "Other" race students were most likely to be bullied and harassed, which is notable because these groups are underrepresented in study samples yet disproportionally victimized in the general population (Felix, Furlong, & Austin, 2009). Furthermore, the association between FRPM and both bullying and sexual harassment extends findings that students from low-SES households were more likely to be victims of bullying (Tippett & Wolke, 2014). It should be noted that effect sizes of demographic differences were small, so they may not be as pervasive or pronounced as assumed. Other characteristics might be more influential or interact with these factors. However, these findings should be noted because different groups of students likely experience victimization in different ways, and some are more at-risk than others.

The second goal of the present study was to investigate relations of bullying and sexual harassment with student well-being. Both were significantly associated with worse socio-emotional and academic indicators. Bullying and sexual harassment had an additive effect, such that each explained additional variance in the presence of the other. Furthermore, we detected a highly vulnerable group: students who reported experiencing both bullying and sexual harassment. These students had distress scores over two standard deviations greater than the mean, which is far greater than students who reported bullying only or sexual harassment only. Previous studies that only examined one form of victimization alone could not have identified this group.

Gruber and Fineran (2008, 2016) reported that sexual harassment was more highly associated with negative well-being than bullying. In contrast, the present study found that the explained variance was similar for bullying and sexual harassment. Since bullying was not defined for students in the Gruber and Fineran studies, and items included examples of peer conflict that might not involve a power imbalance, it is possible that those samples included less serious forms of peer aggression that were not bullying.

The third goal of the present study was to investigate whether students who experienced a single incident of sexual harassment reported greater distress than those who did not experience such victimization. Small-to-medium effect sizes were observed for all four types of sexual harassment. Students who experienced one incident of sexual rumors had the greatest reported distress, followed by those who experienced unwanted physical contact, being bothered to date someone, and non-physical sexual harassment (e.g. comments).

Limitations

One limitation of the present study is the correlational and cross-sectional nature of the findings, which are open to multiple interpretations and leave room for the possibility that associations between study indicators are bi-directional or due to other shared factors. For example, it is possible that experiencing sexual harassment leads to negative outcomes like substance use, but it is also possible that students who engage in substance use may be prone to sexual harassment for other reasons, such as greater association with sexually aggressive individuals. Longitudinal research is needed to assess the temporal ordering of these constructs.

Furthermore, the survey did not investigate specific incidents of victimization or ask students to report reactions to specific incidents, such as "Because I was harassed, I did not want to return to school." Therefore, the present study can only show that someone who reports each type of victimization also endorses elevated levels of distress across one or more items. It was not possible to determine whether a student reporting both bullying and sexual harassment had two separate experiences or referred to the same incident. A more detailed assessment of specific experiences (not feasible in our survey) is needed to distinguish incidents of bullying from sexual harassment.

Another limitation is that all survey items rely on self-report and share method variance, which could lead to response bias such as under- or over-reporting. To limit response bias, screening procedures removed potentially invalid responders. The study also gave specific definitions of bullying and asked about specific types of sexual harassment. Finally, due to the large size and demographic diversity of our sample, it is likely that the findings of the present study are reasonably generalizable to the broader population of U.S. high school students.

However, findings should be replicated in geographically as well as demographically diverse samples.

Research Implications

Our findings demonstrate the importance of measuring both bullying and sexual harassment in studies of adolescent victimization. Although psychological theories have attempted to identify mechanisms supporting the relative harmfulness of one type over the other, these findings provide a more nuanced lens through which to view the literature. Findings suggest that while bullying and sexual harassment are not the same construct, they are meaningfully related forms of aggression that are similarly associated with distress and have additive effects on well-being. A novel finding of this study is that students who reported both had levels of distress well beyond that of students who experienced one or the other. Future research should examine multiple-victimization effects, as well as interactions between bullying, sexual harassment, and demographics such as sexual orientation. Although previous studies have examined sexual orientation as a risk factor, it is important to examine how this factor interacts with bullying and sexual harassment since members of sexual minority groups may experience elements of both bullying and sexual harassment in peer aggression and be uniquely vulnerable to both forms of victimization. Finally, the present study used brief, reliable measures that are suitable for longer school climate surveys and permit researchers and schools to monitor victimization, school climate, student well-being, and demographic associations.

Policy and Prevention Implications

Davis v. Monroe (1999) indicated that even a single instance of sexual harassment can be potentially distressing enough to reach the level of systematically interfering with the victim's access to education. Although many sexual harassment incidents in schools do not meet criteria

to be considered Title IX violations, stakeholders should be aware of the adverse impact of infrequent or seemingly less severe victimization experiences. Our findings support federal and state policies mandating that schools monitor and respond to bullying and sexual harassment.

Programs aimed at addressing multiple types of victimization have shown promising results in middle school samples (Connolly et al., 2015; Taylor, Stein, Mumford & Woods, 2013), and future attention should be given to intervention in high schools as well. Furthermore, state mandates can provide an impetus for school programs. For example, the 2018 Virginia General Assembly mandated that "Any high school family life education curriculum offered by a local school division shall incorporate age-appropriate elements of effective and evidence-based programs on the prevention of dating violence, domestic abuse, sexual harassment, and sexual violence.…" (Code of Virginia, 2018). Policies like this could foster lessons about boundaries and respectful interactions that extend to both bullying and sexual harassment prevention. By monitoring the prevalence and impact of bullying and sexual harassment, and giving priority to policy and prevention efforts for both, stakeholders can take important steps to providing safer learning environments for students.

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Table 1.

Student Victimization Frequencies

	Females (n = 44,733)		Males (n = 41,017)		Total (N= 85,750)	
	N	%	N	%	N	%
Sexual Harassment	22,927	51.3%	11,977	29.2%	34,904	40.7%
Comments	17,557	39.2%	7,488	18.3%	25,045	29.2%
Rumors	10,036	22.4%	5,937	14.5%	15,973	18.6%
Touch	8,871	19.8%	3,747	9.1%	12,618	14.7%
Bother	11,237	25.1%	3,874	9.4%	15,111	17.6%
Bullying	19,569	43.7%	13,716	33.4%	33,285	38.8%
Verbal	16,200	36.2%	11,846	28.9%	28,046	32.7%
Physical	3,795	8.5%	4,363	10.6%	8,158	9.5%
Social	12,240	27.4%	7,294	17.8%	19,534	22.8%
Cyber	7,296	16.3%	3,621	8.8%	10,917	12.7%
Categories						
Neither	16,301	36.4%	22,358	54.5%	38,659	45.1%
Bullying Only	5,505	12.3%	6,682	16.3%	12,187	14.2%
SH Only	8,863	19.8%	4,943	12.1%	13,806	16.1%
Both	14,064	31.4%	7,034	17.1%	21,098	24.6%

Table 2.

Multivariate Analysis of Variance for the Effects of Demographic Variables on Bullying and Sexual Harassment Rates

	Bullying			Sexual Harassment		
Main effect	M (SE)	F	η_p^2	M (SE)	F	η_p^2
Gender		317.92***	.004		3143.72***	.035
Male	0.93 (0.01)			1.07 (0.02)		
Female	1.18 (0.01)			2.31 (0.02)		
Grade		20.42***	.001		32.86***	.001
9th	1.10 (0.02)			1.78 (0.02)		
10th	1.11 (0.02)			1.80 (0.02)		
11th	1.03 (0.02)			1.68 (0.03)		
12th	0.97 (0.02)			1.51 (0.03)		
Race/ethnicity[1]		232.33***	.011		197.05***	.009
White vs. Black	-			-		
White vs. Hispanic	-			-		
White vs. Asian	-			-		
White vs. Other	-			-		
FRPM[2]		216.16***	.003		26.20***	.001
Yes	1.17 (0.01)			1.75 (0.02)		
No	0.93 (0.01)			1.63 (0.02)		

Note. [1]Post hoc analysis using Dunnett's Pairwise Comparison – White vs. Hispanic, Black, Asian, and Other. [2]FRPM - whether students qualify for free/reduced-price meals. ***$p < .001$

Table 3.

Associations of Bullying and Sexual Harassment with Student Well-Being Indicators

Indicators	Model 1		Model 2a		Model 2b		Model 3	
Mental Health[1]								
Bullying	-		0.338	***	-		0.241	***
SH	-		-		0.323	***	0.208	***
R^2	0.066	***	0.178	***	0.166	***	0.210	***
ΔR^2	-		0.112	***	0.100	***	0.144	***
Engagement[1]								
Bullying	-		0.217	***	-		0.173	***
SH	-		-		0.177	***	0.094	***
R^2	0.019	***	0.067	***	0.050	***	0.074	***
ΔR^2	-		0.048	***	0.031	***	0.055	***
Alcohol[2]								
Bullying	-		1.379	***	-		1.155	***
SH	-		-		1.557	***	1.452	***
R^2	0.049	***	0.068	***	0.085	***	0.088	***
ΔR^2	-		0.019	***	0.036	***	0.039	***
Marijuana[2]								
Bullying	-		1.415	***	-		1.179	***
SH	-		-		1.583	***	1.460	***
R^2	0.044	***	0.068	***	0.084	***	0.088	***
ΔR^2	-		0.023	***	0.040	***	0.044	***
Suicide Attempts[2]								
Bullying	-		1.936	***	-		1.598	***
SH	-		-		1.910	***	1.535	***
R^2	0.040	***	0.140	***	0.131	***	0.169	***
ΔR^2	-		0.100	***	0.092	***	0.129	***
Ed Expectations[2]								
Bullying	-		1.110	***	-		1.127	***
SH	-		-		1.021	*	1.012	***
R^2	0.039	***	0.040	***	0.040	***	0.040	***
ΔR^2	-		0.001	*	0.001	*	0.001	*
Grades[2]								
Bullying	-		1.240	***	-		1.212	***
SH	-		-		1.149	***	1.051	***
R^2	0.042	***	0.046	***	0.043	***	0.046	***
ΔR^2	-		0.004	***	0.002	***	0.004	***
Safety[2]								
Bullying	-		1.676	***	-		1.503	***
SH	-		-		1.528	***	1.271	***
R^2	0.048	***	0.076	***	0.067	***	0.081	***
ΔR^2	-		0.028	***	0.019	***	0.033	***

Note. [1] Linear model coefficients are standardized on x and y; [2] Logit model coefficients are odds ratios standardized on x; *$p < .05$; ***$p < .001$

R^2 for all logit models is pseudo-R^2

ΔR^2 is relative to the covariate model (coefficients not pictured) for each indicator

Table 4.

Analysis of Covariance for the Effects Bullying and Sexual Harassment Victimization on Overall Distress, Controlling for Demographic Variables

	Overall Distress[1]		
Effect	M (SE)	F	η_p^2
Victimization Category		2,996.61***	.095
Neither	-1.30 (0.02)	-	-
Bullying Only	0.26 (0.04)	-	-
SH Only	0.13 (0.04)	-	-
Both	2.14 (0.03)	-	-
Covariates			
Gender	-	756.01***	.009
Grade	-	360.19***	.004
Race/ethnicity[2]			
Black	-	268.39***	.003
Hispanic	-	460.00***	.005
Asian	-	164.34***	.002
Other	-	865.63***	.010
FRPM[3]	-	1,239.61***	.014

Note. [1] Distress scores standardized [2] White is reference group [3] FRPM - Whether students qualify for free/reduced-price meals.
***$p < .001$

Table 5.

Independent Means T-tests for Effects of Single Sexual Harassment Experience on Student Distress

	N	Mean (SD)	t value	Cohen's d
Comments/jokes			-16.61***	0.19
None	60,705	-0.56 (3.97)		
1 experience	9,333	0.18 (4.03)		
Rumors			-31.86***	0.41
None	69,777	-0.58 (3.86)		
1 experience	7,492	1.15 (4.53)		
Touch			-25.04***	0.37
None	73,132	-0.45 (3.95)		
1 experience	5,484	1.12 (4.52)		
Date			-23.20***	0.33
None	70,639	-0.49 (3.93)		
1 experience	5,976	0.89 (4.45)		

Note. ***p < .001

Manuscript Three

School Climate Moderates the Association Between Sexual Harassment and Student Well-Being

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Abstract

Sexual harassment is a prevalent yet understudied challenge adolescents face in high school. Because sexual harassment is associated with negative well-being indicators like depression, substance use, and suicidality, school stakeholders must understand its potential consequences for student well-being, and how school climate might impact prevention efforts. The present study investigated whether school climate measures of disciplinary structure, student support, and engagement moderate the relationship between sexual harassment and student well-being. A statewide survey of 85,750 students (grades 9-12) in 322 high schools reported how many times in the past school year they had experienced sexual harassment. Participants also reported school climate perceptions and measures of well-being, including indicators of mental health, substance use, and suicide attempts. Findings indicated that positive perceptions of school climate moderated the relations between sexual harassment experiences and student well-being. The findings from this study will provide valuable information for school stakeholders as they seek to mitigate the impact of sexual harassment in schools.

Keywords: sexual harassment, school climate, mental health, substance use, suicide

School Climate Moderates the Association Between Sexual Harassment and Student Well-Being

In 2017, an outpouring of news reports of sexual harassment in professional settings triggered a cultural shift known as the Me Too movement (Camera, 2018). This movement raised awareness about sexual harassment in the workplace. However, sexual harassment does not originate in adulthood and there is a need to recognize its presence in adolescence. Efforts to combat sexual harassment among adults can be extended to include adolescents in schools.

School sexual harassment is defined by the U.S. Department of Education (ED) as any unwelcome behavior of a sexual nature that interferes with a student's ability to learn, study, work, or participate in school activities (USED Office for Civil Rights, 2008). Sexual harassment can take many different forms, such as verbal harassment (e.g. unwanted sexual humor, homophobic slurs), nonverbal harassment (e.g. unwanted written sexual communications, gestures), or physical harassment (e.g. unwanted sexual touching, kissing; USED Office for Civil Rights, 2008). Schools have a legal obligation to address sexual harassment when it is severe enough to interfere with learning (Title IX).

Sexual harassment is prevalent in schools and associated with negative student well-being (Eom, Restaino, Perkins, Neveln, & Harrington, 2015; Gruber & Fineran, 2016). For example, studies have found associations between sexual harassment experiences and academic correlates such as lower grades, poor engagement in school, and trouble studying (AAUW, 2011; Gruber & Fineran, 2016). Studies have also found that sexual harassment is associated with socioemotional correlates like poor mental health, substance use, and suicidal behaviors (Crowley & Cornell, 2020; Gruber & Fineran, 2008). Furthermore, Crowley and Cornell (2020) found that students who experienced even a single sexual harassment incident reported higher distress scores than nonvictims.

To combat the problem of sexual harassment in schools, school personnel should identify factors that can lessen the impact of sexual harassment for students. Research suggests that fostering a positive school climate might serve this purpose. Schools with more positive climates tend to have lower levels of victimization and better student outcomes (Bradshaw, 2015; Cornell, Shukla, & Konold, 2015; Guerra, Williams, & Sadek, 2011).

Previous studies determined that a positive school climate is associated with lower rates of sexual harassment (Attar-Schwartz, 2009; Crowley, Datta, Stohlman, Cornell, & Konold, 2019), but have not examined the well-being of students who are victims of sexual harassment. A positive school climate characterized by strict but fair disciplinary structure, high support for students, and high student engagement could likely serve as a protective factor against the negative impact of sexual harassment. There are multiple ways that a positive school climate could have mitigating effects. For example, students who perceive their schools as structured and fair may be more likely to report victimization and trust officials to address it, and as a result feel less distressed about the victimization. Similarly, it is possible that students who are harassed in school environments generally viewed as caring and supportive would feel less vulnerable and alienated, and more likely to seek help, following victimization. Finally, students who feel more engaged in school may be less likely to participate in risky behaviors following sexual harassment victimization that could be harmful to their academic or socioemotional well-being.

This study seeks to identify whether positive school climate reduces the impact of sexual harassment on student well-being. It should be noted that in a correlational study, findings are open to multiple interpretations, and true causal effects cannot be determined. Thus, references to the impact of sexual harassment in our study represent the theoretical hypothesized mechanism of observed associations, not statistical claims of causality.

Authoritative School Climate and Peer Victimization

School climate is broadly defined as the quality of school life that reflects the norms, goals, values, and practices of a school (Cohen, McCabe, Michelli, & Pickeral, 2009). Authoritative school climate theory proposes that positive school climate has two critical components: high disciplinary structure (i.e., perception that rules are strict but fair), and high student support, (i.e. perception that students feel supported and respected by school personnel (Gregory & Cornell, 2009; Gregory et al., 2010). Authoritative school climate dimensions of structure and support have been shown to be associated with a variety of positive outcomes for schools, particularly reduced peer victimization. For example, Gregory and colleagues (2010) found that in a sample of 9th grade students and teachers, high structure and high support were associated with lower levels of peer victimization such as bullying, theft, and property damage (Gregory et al., 2010). Similarly, Cornell, Shukla, and Konold (2015) found that middle schools higher in structure and support had lower prevalences of teasing and bullying, as well as lower rates of other aggression such as fighting and threatening behavior.

One study has examined associations of authoritative school climate characteristics with sexual harassment specifically. In this study, researchers found that in a sample of high school students, higher structure and support were associated with lower levels of peer sexual harassment (Crowley et al., 2019). This and the above-mentioned studies investigated whether structure and support were associated with lower rates of victimization, but did not investigate associations with the well-being of students who experience victimization.

Another key element of school climate is student engagement in school. Studies have demonstrated associations between structure, support, and engagement (Konold, Cornell, Jia & Malone, 2018; Wang & Eccles, 2013). For example, Wang and Eccles (2013) found that several

features of school climate were related to student engagement, and emphasized the need for schools to be highly structured and staff to be emotionally supportive in order for students to feel engaged. Similarly, Konold and colleagues (2018) found that schools with higher structure and support were likely to have more engaged students.

Moderation Studies

A moderator variable is a third variable that affects the strength of the relationship between two variables of interest. Studies of school climate as a moderator in the relationship between victimization and negative well-being are few, and those that do exist have focused primarily on community violence and bullying. Nonetheless, such studies suggest that positive school climate may be a protective factor or moderator in the relationship between victimization and internalizing distress symptoms. For example, O'Donnell, Roberts, and Schwab-Stone (2008) found that Gambian high school students who perceived their school climates more positively reported lower traumatic stress after witnessing or experiencing community violence than those who perceived their school climates less positively. Similarly, Davidson and Demaray (2007) found that students who perceived their teachers and schools as supportive endorsed fewer internalizing problems after being bullied than students who perceived teachers and schools as less supportive.

Studies also found that positive school climate moderates the relationship between bullying and other student well-being indicators, such as substance use and suicidality. Doumas, Midgett, and Johnston (2017), found that middle and high school students who perceived their school climates as positive reported lower rates of illicit substance use following experiences of bullying than those who did not perceive their school climates as positive. Wang, La Salle, Wu,

Do, and Sullivan (2018) found that positive school climate perceptions were associated with fewer suicidal thoughts and behaviors for middle school students.

Present Study

The present study investigated school climate as a moderator of the relationship between sexual harassment victimization and student well-being. The primary research question is: Do school climate measures of structure, support, and engagement moderate the relationship between sexual harassment and student well-being? It was hypothesized that structure, support, and engagement would moderate this relationship, such that victims of sexual harassment who perceived their schools as more highly structured and supportive, and those who reported higher engagement in their schools, would report less-negative outcomes on measures of well-being. A previous study using the same sample as the present study investigated prevalence of sexual harassment and bullying, and compared their associations with student well-being indicators (Crowley & Cornell, 2020). The present study differs substantively from the previous study, in that this study investigates school climate as a moderator of the sexual harassment-well-being relationship, and does not examine bullying as the previous study did.

Method

Sampling and Participants

The sample was obtained from a statewide survey of Virginia high schools conducted in spring 2018 as part of the state's annual School Safety Audit program (Cornell et al., 2018). The school participation rate was 99% (322 of 324 eligible high schools). The study was approved by the University of Virginia Institutional Review Board.

Schools were given the option to either (a) invite all 9th through 12th graders to participate (whole-grade) or (b) randomly select 25 students from each grade to participate (random

sample). Schools who chose the random sample option were provided with a random number list for each grade (calibrated to enrollment in each grade) and instructions for selecting students by matching the random numbers to an alphabetical list of all students in that grade. Details of the selection process and response rate analyses are available in a technical report (Cornell et al., 2018). All students were eligible to participate except those unable to complete the survey because of limited English proficiency or an intellectual or physical disability. Surveys were administered anonymously online using Qualtrics software, and students completed the survey in classrooms under teacher supervision using a standard set of instructions (Cornell et al., 2018).

A multistage screening procedure dropped 7,420 (8.0%) student surveys for two reasons: (1) completion time was lower than an empirically determined cutoff of approximately six minutes (0.4%; see masked citation for more information) or (2) students reported not answering truthfully on either of two validity screening items (7.6%). Information on the validity screening process and supporting research is available in a technical report (Cornell et al., 2014).

The final analytic sample consisted of N = 85,750 (52.2% female) participants in the ninth (27.4%), tenth (26.3%), eleventh (24.4%), and twelfth (21.9%) grades. The racial/ethnic breakdown was 52.5% White or Caucasian, 15.1% Black or African American, 11.8% Hispanic, 4.5% Asian, 0.5% American Indian/Alaska Native, and 0.3% Native Hawaiian/Pacific Islander, with an additional 13.5% of students identifying as two or more races. Approximately 23.8% reported speaking a language other than English at home. For students' parental education, 21.8% completed postgraduate studies, 24.5% completed four-year college, 11.6% completed two-year college or technical education, 25.6% graduated from high school, 7.3% did not graduate from high school, and 9.1% did not know. Thirty-two percent of students (32.1%) were

eligible for free or reduced-price meals (FRPM, a commonly used proxy for student SES) at school.

Demographic data of the analytic sample was fairly representative of the breakdown in state records. State records indicated that the average percentage of students eligible for FRPM in participating schools was 43.2%, with a range of 2% to 100%. School enrollments were approximately 57.8% White or Caucasian, 21.8% Black or African American, 11.1% Hispanic, 4.6% Asian, 0.2% American Indian, 0.1% Hawaiian, and 4.2% two or more races.

Measures

The Virginia Secondary School Climate Survey consisted of approximately 100 questions about school climate characteristics and student experiences (see Cornell et al., 2018). The present study concerned a subset of items measuring sexual harassment experiences, school climate perceptions, and well-being indicators.

Sexual Harassment. The sexual harassment scale consisted of four items ($\alpha = .78$) derived from the AAUW's sexual harassment survey (AAUW, 2011) and the University of Illinois Victimization Scale (UIVS; Espelage & Holt, 2001). The scale was limited to four items in order to accommodate stakeholder requirements for a brief scale. Although four items cannot encompass the full range of sexual harassment behaviors, items covered several forms of sexual harassment that would be most relevant to school settings. Each question began with the root, "During the past 12 months how many times did another student …." and assessed student's experiences of: (a) unwelcome sexual comments, jokes, or gestures, (b) sexual rumors being spread about them, (c) being repeatedly bothered to go out with someone, and (d) unwanted physical contact of a sexual nature. Students responded to these items on a five-point Likert scale (1 = *never*, 2 = *once,* 3 = *twice*, 4 = *three times*, 5 = *Four or more times*). A multilevel

confirmatory factor analysis (CFA) found good fit for the sexual harassment scale (CFI = .993; TLI = .980; RMSEA = .025). Standardized factor loadings for each item were significant at the individual (.6 to .75, all *p*s < .001), and school level (.59 to 1.025, all *p*s < .001; Crowley et al., 2019). Sexual harassment items were averaged to give each student a mean score.

School Climate. Disciplinary structure, the perceived fairness and strictness of school discipline, was measured with a seven-item scale (Konold et al., 2014). Each item was answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Representative items included, "The adults at this school are too strict" and "Students are treated fairly regardless of their race or ethnicity" (range = 7-28, α = .79 in the current sample). Structure items were averaged so each student had a mean score.

Student support was measured with an eight-item scale. Konold et al. (2014) demonstrated psychometric support for this scale through multilevel confirmatory factor analysis. Each item was answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Representative items included "Most teachers and other adults at this school want all students to do well" and "There are adults at this school I could talk with if I had a personal problem" (range = 8-32, α = .86 in the current sample). Support items were averaged so each student had a mean score.

Engagement in school was measured with a six-item scale that included two factors: cognitive engagement (investment in learning; α = .70) and affective engagement (positive feelings towards school; α = .88). Three items measured cognitive engagement (e.g. "I want to learn as much as I can at school") and three items measured affective engagement (e.g. "I am proud to be a student at this school"). All items were answered on a four-point Likert-scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*). Multilevel CFAs supported

the use of this scale at the student and school levels (Konold et al., 2014). Engagement items were averaged so each student had a mean score.

Mental Health and Risk Behaviors. The student mental health scale consisted of four items measured with a four-item scale ($\alpha = .84$) derived from the Orpinas (1993) depression scale. Student were asked "In the last 30 days, how often…": (a) "were you sad?," (b) "were you grouchy, irritable, or in a bad mood?," (c) "did you feel hopeless about the future?," (d) "did you have difficulty concentrating on your school work?." Although these items do not reflect the full range of psychological symptoms students experience, they are meant to capture common symptoms relevant to student well-being and school performance in a brief scale that can be incorporated into a comprehensive school climate survey. Students responded to these items on a five-point Likert scale (0 = *never*, 1 = *seldom,* 2 = *sometimes*, 3 = *often*, 4 = *always*). Mental health items were averaged so each student had a mean score.

Self-reported substance use and suicidality were measured using items based on the Youth Risk Behavior Survey (Kann et al., 2016). Substance use was measured by two items, "During the past 30 days, on how many days did you have at least one drink of alcohol?" with a seven-point Likert scale (ranging from 1 = *0 days* to 7 = *All 30 days*); and "During the past 30 days, how many times did you use marijuana?," with a six-point Likert scale (ranging from 1 = *0 times* to 6 = *40 or more times*). Student suicidality was measured by one item, "During the past 12 months, how many times did you actually attempt suicide?," with a five-point Likert scale (ranging from 1 = *0 times* to 5 = *6+ times*). These items were dichotomized for analyses due to the high distribution of students who endorsed no substance use and/or suicide attempts.

Covariates. Analyses included four student-level demographic characteristics and three school-level demographic characteristics obtained from the survey. The student-level covariates

are: gender (male, female; binary categorical variable, male as referent group), grade level (9th, 10th, 11th, 12th; continuous variable), race/ethnicity (White/Caucasian, Black/African American, Hispanic, Asian, Other; categorical dummy variables, White as referent group), and SES (one item asking whether students qualified for FRPM; binary categorical variable, 'No' as referent group). The school-level covariates are: number of students enrolled in each school (continuous variable), percentage of students who identify as White/Caucasian in each school (this variable is included to control for the racial/ethnic makeup of a school; continuous variable), and percentage of students who are eligible for FRPM in each school (proxy for measuring the SES of each school; continuous variable).

Analytic Plan

The proposed research question, "Do school climate measures of structure, support, and engagement moderate the relationship between sexual harassment and student well-being?" was investigated using hierarchical regression. There were four outcome variables of interest (mental health, alcohol use, marijuana use, and suicide attempts). For each of the outcome variables of interest, there were three sets of models to examine the associations of school climate measures (structure, support, and engagement) with each outcome variable. For each set of models, there were three steps: (1) only demographic covariates as predictors of each indicator, (2) covariates with the addition of sexual harassment, (3) covariates and sexual harassment with the addition of a single school climate factor (e.g. structure) and the interaction of sexual harassment x school climate factor. The interaction models were the primary models of interest, as they investigated school climate factors as moderators of sexual harassment-student well-being relationships.

Linear regression was used for the continuous indicator (mental health) and binomial logistic regression was used for binary categorical indicators (alcohol use, marijuana use, suicide

attempts; coded ‘Yes” or “No’, ‘No’ as referent group). All outcome variables were student-level, but school-level covariates and school-level means for sexual harassment and school climate variables were added to investigate potential associations at the school level of analysis. Statistical analyses were performed with Mplus 7.0 using a maximum likelihood estimator with robust standard errors (MLR) and a complex specification, to account for nesting of students within schools.

Results

Frequencies of sexual harassment items, as well as rates of well-being indicators for harassed vs. not harassed students are shown in Table 1. Sexual harassment was prevalent in the present sample, with 41% of students endorsing at least one experience of sexual harassment over the past year. Non-physical sexual harassment (e.g. comments, jokes, gestures) was the most common (29% of all students), followed by sexual rumors (19%), being bothered to date (18%), and being touched in a sexual and unwelcome way (15%). Additional information about prevalence and demographic frequencies of sexual harassment in the present sample are available in a previous publication using the same data (Crowley & Cornell, 2020).

To answer the primary research question, results of hierarchical regression models are depicted in Tables 2, 3, and 4. For all predictor and outcome variables in the regression models, higher scores indicate better outcomes. Student-level sexual harassment and school climate predictors were group-mean-centered in order to remove between-cluster variation from their substantive interpretations, and school-level sexual harassment and school climate predictors were grand-mean-centered to remove within-cluster variation from their substantive interpretations (see Enders & Tofighi, 2007 for further discussion of centering L1 and L2 predictors). The Pearson product-moment correlations between component variables were as

follows: student-level structure and support, $r = .56$; student-level structure and engagement, $r = .46$; student-level support and engagement, $r = .57$; school-level structure and support, $r = .72$; school-level structure and engagement, $r = .74$; school-level support and engagement, $r = .82$.

Table 2 depicts regression models involving the first school climate factor, disciplinary structure. The first step of the model represents the relations between each indicator and all control variables at the student level (gender, grade level, race/ethnicity, and FRPM) and school level (enrollment, % White, and % FRPM). For all four structure models, covariates explained a small yet statistically significant amount of variance in well-being indicators. The second step of the model represents relations between each indicator and both student-level and school-level sexual harassment, which also explains a statistically significant amount of variance in each well-being indicator. The final step adds structure and the structure x sexual harassment interaction term. The interaction term is also statistically significant, demonstrating that structure is a moderator of the relationship between sexual harassment and all four well-being indicators. The direction of the moderation represents a protective effect (see descriptions of Figure 1 sample graphs below).

Table 3 demonstrates regression models involving the second school climate factor, student support. Similar to the structure models, all component steps explain significant amounts of variance in all four well-being indicators. The final support x sexual harassment interaction step demonstrates that support is a moderator of the relationship between sexual harassment and all four well-being indicators. The direction of the moderation represents a protective effect (see descriptions of Figure 1 sample graphs below).

Table 4 demonstrates regression models involving the third school climate factor, student engagement. Like the other models, all component steps explain significant amounts of variance

in all four well-being indicators. The final engagement x sexual harassment interaction step demonstrates that engagement is a moderator of the relationship between sexual harassment and all four well-being indicators. The direction of the moderation represents a protective effect (see descriptions of Figure 1 sample graphs below).

Figure 1 depicts one example interaction graph for each of the four well-being indicators. The top left graph demonstrates support as a moderator of the relationship between sexual harassment and suicide attempts. The graph converts predicted values from regression models into student rates of suicide attempts (higher rates indicate more suicide). The rate of a suicide attempt is higher among students who have been sexually harassed than students who have not been sexually harassed, and that difference is larger when these students are in schools with a less supportive school climate. When students were harassed in less supportive schools, their rate of attempting suicide was 22%, whereas when they were harassed in more supportive schools their rate of attempting suicide was only 6%. Furthermore, there was a greater difference in the differences of rates of suicide attempts for students who were harassed vs. not harassed in low support schools (16% difference) as compared to those who were harassed vs. not harassed in high support schools (4% difference).

The bottom right graph demonstrates support as a moderator of the relationship between sexual harassment and student mental health. The graph converts predicted values from regression models into student mean ratings of depressive symptom scores (higher scores indicate greater endorsement of depressive symptoms). When students were harassed in less supportive schools, their average depression symptom score was 2.54 whereas when they were harassed in more supportive schools their average depressive symptom score was only 1.75. Furthermore, there was a greater difference in the differences of mean depressive symptom

scores for students who were harassed vs. not harassed in low support schools (0.6-unit difference) as compared to those who were harassed vs. not harassed in high support schools (0.45-unit difference). A 0.15-unit difference is approximately equal to endorsing one of the four mental health items three Likert-scale units lower, such as endorsing "In the past 30 days, how often were you sad?" as "seldom" instead of "always".

The bottom left graph demonstrates structure as a moderator of the relationship between sexual harassment and marijuana use. The graph converts predicted values from regression models into student rates of marijuana use (higher rates indicate greater marijuana use). When students were harassed in less structured schools, their rate of marijuana use was 25%, whereas when they were harassed in more structured schools their rate of marijuana use was only 6%. Furthermore, there was a greater difference in the differences of rates of marijuana use for students who were harassed vs. not harassed in low structure schools (7% difference) as compared to those who were harassed vs. not harassed in high structure schools (3% difference).

The top right graph demonstrates engagement as a moderator of the relationship between sexual harassment and alcohol use. The graph converts predicted values into student rates of alcohol use (higher rates indicate greater alcohol use). When less-engaged students were harassed, their rate of alcohol use was 33%, whereas when more-engaged students were harassed their rate of alcohol use was only 14%. Furthermore, there was a greater difference in the rates of alcohol use for less-engaged students who were harassed vs. not harassed (12% difference) as compared to more-engaged students who were harassed vs. not harassed (6% difference).

Discussion

The present study investigated school climate as a moderator of the relationship between sexual harassment victimization and student well-being indicators. To our knowledge, this is the

first study to examine the moderating effects of school climate with sexual harassment specifically. Other similar studies have focused primarily on bullying (Davidson & Demaray, 2007; Doumas et al., 2017; Wang et al., 2018). Although sexual harassment and bullying can overlap, previous research has shown that they are distinguishable constructs with theoretical/definitional distinctions, different prevalence rates, and unique impacts on student well-being (Crowley & Cornell, 2020).

Our findings, that structure, support, and engagement moderate the relationship between sexual harassment and student well-being, align with previous findings that positive school climate can be a protective factor in the relationship between victimization and student distress. Previous studies have found that bullied students who perceived their school climates as more positive reported fewer internalizing problems, lower rates of illicit substance use, and fewer suicidal thoughts and behaviors than bullied students who did not perceive their school climates as positive (Davidson & Demaray, 2007; Doumas et al., 2017; Wang et al., 2018).

The present study suggests that student perceptions of school climate can buffer the negative effects of victimization they experience. It is likely that students who perceive their schools as structured and fair may be more likely to report victimization and trust officials to address it, and as a result feel less distressed about the victimization that occurred. Similarly, students who perceive their school environments as caring and supportive may feel less vulnerable and alienated after being sexually harassed, and more likely to seek help following victimization. Finally, students who feel engaged in their schools may be more invested in their schooling and less likely to engage in risk behaviors such as substance use following victimization.

The results from the present study fit well into the theoretical basis of authoritative school climate theory. Previous research has found that in a sample of high school students, higher structure and support were associated with lower levels of peer sexual harassment (Crowley et al., 2019). The present study adds another dimension to the hypothesized beneficial effects of authoritative school climate; not only are students sexually harassed less often in authoritative schools, but those who are harassed also experience less-negative outcomes than their peers in less authoritative schools. Although positive school climate is defined in a variety of ways in the literature, the present study suggests that authoritative schools in particular—those that are high in structure and support, and have more engaged students—can buffer students from the potential negative effects of experiencing sexual harassment victimization.

Limitations

One limitation of the present study is the correlational and cross-sectional nature of the design. Correlational, cross-sectional findings are open to multiple interpretations and leave room for the possibility that associations between study indicators are bi-directional or due to other shared factors. Future longitudinal research and intervention studies are needed to assess the temporal ordering of these constructs and to directly examine how improvements to school climate may affect the potential impact of sexual harassment on student well-being.

Furthermore, the survey does not investigate specific incidents of victimization or ask students to report reactions to specific incidents, such as “Because I was harassed, I did not want to return to school.” Therefore, the present study can only show that someone who reports each type of victimization also endorses elevated levels of distress across one or more items.

Another limitation is that all survey items rely on self-report and share method variance, which could lead to response bias such as under- or over-reporting. To reduce response bias,

screening procedures removed potentially invalid responders. Nevertheless, it would be useful to study student responses to sexual harassment using independent measures of well-being or adjustment.

Despite these limitations, the present study examined an important research question that can inform stakeholders as they seek to combat sexual harassment in schools. Our sample is large and demographically diverse. However, findings should still be replicated in other geographically and demographically diverse samples.

Implications

In order to combat sexual harassment in schools, it is important for stakeholders to strive to lessen both its prevalence and impact. The results from the present study suggest that authoritative school climate could inform these efforts. One intervention system that could apply authoritative practices to improve school climate is School-Wide Positive Behavior Interventions and Supports (SWPBIS). SWPBIS is a universal framework that promotes positive school climate and seeks to reduce behavior problems among students (Bosworth & Judkins, 2014; Bradshaw, Koth, Thornton, & Leaf, 2009). Using a three-tiered public health approach, this system establishes concrete behavior plans and expectations aimed at increasing structure and support for students and thereby promoting a school climate that does not condone peer victimization. Randomized controlled trials of SWPBIS have demonstrated that schools implementing the system reported less student victimization such as bullying (Gregory et al., 2010; Ross & Horner, 2009). Given the likely protective effects of authoritative school climate documented in the present study, it is likely that schools could also use SWPBIS practices to reduce the prevalence and impact of sexual harassment among students.

Furthermore, research on sexual harassment-specific interventions suggests that the most effective intervention elements are those that incorporate characteristics of structure and support, broadly conceived. For example, Shifting Boundaries is a school-based program aimed at preventing sexual harassment and adolescent relationship abuse that incorporates both classroom-based and school-wide interventions (Taylor, Stein, Mumford, & Woods, 2013). In the classroom-based interventions, students are taught about state and federal laws regarding sexual harassment, school policies prohibiting harassment behaviors, and consequences for perpetrating harassment. They are also taught general lessons about respect for others, appropriate interactions in peer relationships, and the role of bystanders to intervene to support those being victimized. School-wide intervention elements include practices such as revising school protocols to detect and respond to sexual harassment, increasing presence of school personnel in unsafe areas, and placing posters to inform students about what sexual harassment is and how to report it (Taylor, Stein, Mumford, & Woods, 2013).

One can see how various elements of the Shifting Boundaries intervention may invoke elements of authoritative school climate. For example, informational lessons about policies against sexual harassment and consequences for perpetration, as well as school-wide efforts to improve protocols for addressing perpetration, may enhance students' perceptions of the disciplinary structure of their schools. It is likely that clearly communicating to students the rules and consequences for their behaviors, and enhancing the responsiveness of school personnel to victimization, uses elements of structure to decrease student likelihood of perpetrating sexual harassment and increase likelihood that victims will report.

Various elements of Shifting Boundaries can also be perceived as enhancing support in schools. For example, classroom lessons about respect and the ability of bystanders to intervene,

as well as school-level practices of increasing the presence of school personnel in unsafe areas and placing posters to inform students about reporting, may enhance students' perceptions of the supportiveness of their schools. It is likely that encouraging students to stand up for one another and increasing visibility of policies/personnel that are actively trying to improve student safety could increase the likelihood that students will feel supported and seek help if they are harassed.

Outside of largescale intervention programs, there are actions that school personnel can take to emulate the principles of authoritative school climate. Teachers, staff, and school mental health professionals should be aware of the way their behaviors and relationships with students communicate respect and support, and efforts should be made to encourage reporting of victimization and provision of services to those who do report. School mental health professionals can be leaders in enhancing awareness, training, and intervention programs to improve well-being for victimized students (Nickerson, 2019). Furthermore, school personnel should clearly communicate expectations and consequences for student behavior. Administrators should be mindful of implementing and clearly communicating to students their policies aimed at detecting, addressing, and preventing sexual harassment. Efforts to foster positive school climate can enhance the abilities of stakeholders to ensure the safety and well-being of their students.

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Table 1.

Student Frequencies of Victimization and Well-Being Indicators

	Harassed (n = 34,904)		Not Harassed (n = 50,846)		Total (N= 85,750)	
	N	%	*N*	%	*N*	%
Sexual Harassment	-	-	-	-	34,904	40.7%
Comments	-	-	-	-	25,045	29.2%
Rumors	-	-	-	-	15,973	18.6%
Touch	-	-	-	-	12,618	14.7%
Bother	-	-	-	-	15,111	17.6%
% Attempt Suicide	5,050	14.5%	1,785	3.5%	6,835	8.0%
% Used Alcohol	7,957	22.8%	5,994	11.8%	13,951	16.3%
% Used Marijuana	5,236	15.0%	3,864	7.6%	9,100	10.6%
Mental Health	*M* = 2.25	*SD* = 0.98	*M* = 1.48	*SD* = 1.0	*M* = 1.79	*SD* = 1.06

Table 2.

Associations of Sexual Harassment and Structure with Student Well-Being Indicators

	Mental Health[a]			Alcohol Use[b]			Marijuana Use[b]			Suicide Attempts[b]		
	B	R^2	ΔR^2	*B*	R^2	ΔR^2	*B*	R^2	ΔR^2	*B*	R^2	ΔR^2
Predictors												
Male	0.356***			-0.223***			-0.375***			0.263***		
Grade	-0.032***			-0.331***			-0.303***			0.091***		
FRPM	-0.065***			0.161***			-0.176***			-0.316***		
Hispanic	0.072***			0.128**			-0.209***			-0.384***		
Black	0.222***			0.709***			-0.076			0.012		
Asian	-0.064***			0.765***			0.668***			-0.236***		
Other	0.008			0.134***			-0.179***			-0.384***		
Enroll	0.000***			0.000			0.000**			0.000***		
% White	0.010			-0.279*			0.278*			0.183		
% FRPM	0.000***	0.065***		-0.001***	0.065***		0.000***	0.056***		0.001***	0.054***	
SH[c]	0.180***			0.009			0.010			0.361***		
SH_sch[d]	0 508***	0.166***	0.101	0.742**	0.117***	0.052	1.130***	0.112***	0.056	1.381***	0.150***	0.096
Structure[c]	0.377***			0.778***			0.977***			0.616***		
Str_sch[d]	0.271***			0.901***			0.886***			0.434**		
SH x Str[c]	0.063***	0.205***	0.039	0.178***	0.162***	0.045	0.182***	0.181***	0.069	0.146***	0.180***	0.030

Note. [a] Linear model coefficients are standardized on y; [b] Logit model coefficients are unstandardized

[c] SH, Structure, and SH x Str are student level variables, group-mean centered;

[d] SH_sch and Str_sch are school level variables, grand-mean centered

All ΔR^2 significant at p < .001; For *B* and R^2 values * $p < .05$; ** $p < .01$; *** $p < .001$

Table 3.

Associations of Sexual Harassment and Support with Student Well-Being Indicators

	Mental Health[a]			Alcohol Use[b]			Marijuana Use[b]			Suicide Attempts[b]		
	B	R^2	ΔR^2	*B*	R^2	ΔR^2	*B*	R^2	ΔR^2	*B*	R^2	ΔR^2
Predictors												
Male	0.352***			-0.228***			-0.380***			0.266***		
Grade	-0.046***			-0.352***			-0.331***			0.073***		
FRPM	-0.071***			0.147***			-0.192***			-0.326***		
Hispanic	0.070***			0.121**			-0.206***			-0.368***		
Black	0.208***			0.656***			-0.123**			0.001		
Asian	-0.049**			0.808***			0.723***			-0.208**		
Other	0.002			0.102**			-0.206***			-0.381***		
Enroll	0.000***			0.000			0.000**			0.000***		
% White	-0.025			-0.293*			0.238**			0.177		
% FRPM	0.000***	0.065***		-0.001***	0.065***		0.000***	0.056***		0.001***	0.054***	
SH[c]	0.209***			0.268***			0.195***			0.439***		
SH_sch[d]	0.367***	0.166***	0.101	0.835**	0.117***	0.052	1.140***	0.112***	0.056	1.358***	0.150***	0.096
Support[c]	0.392***			0.568***			0.798***			0.700***		
Supp_sch[d]	0.530***			0.731**			0.813**			0.617**		
SH x Sup[c]	0.048***	0.205***	0.039	0.072***	0.139***	0.022	0.099***	0.154***	0.042	0.097***	0.182***	0.032

Note. [a] Linear model coefficients are standardized on y; [b] Logit model coefficients are unstandardized

[c] SH, Support, and SH x Sup are student level variables, group-mean centered;

[d] SH_sch and Supp_sch are school level variables, grand-mean centered

All ΔR^2 significant at p < .001; For *B* and R^2 values * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4.

Associations of Sexual Harassment and Engagement with Student Well-Being Indicators

	Mental Health[a]			Alcohol Use[b]			Marijuana Use[b]			Suicide Attempts[b]		
	B	R^2	ΔR^2	*B*	R^2	ΔR^2	*B*	R^2	ΔR^2	*B*	R^2	ΔR^2
Predictors												
Male	0.406***			-0.154***			-0.271***			0.371***		
Grade	-0.031***			-0.331***			-0.301***			0.103***		
FRPM	-0.040***			0.184***			-0.145***			-0.280***		
Hispanic	0.080***			0.127**			-0.199***			-0.355***		
Black	0.213***			0.651***			-0.132**			0.006		
Asian	-0.073**			0.780***			0.674***			-0.260***		
Other	0.014			0.114**			-0.186***			-0.359***		
Enroll	0.000***			0.000			0.000**			0.000***		
% White	-0.006			-0.258*			0.273*			0.196*		
% FRPM	0.000***	0.065***		-0.001***	0.065***		0.000***	0.056***		0.001***	0.054***	
SH[c]	0.159***			0.242***			0.125*			0.280***		
SH_sch[d]	0.383***	0.166***	0.101	0.920***	0.117***	0.052	1.046***	0.112***	0.056	1.186***	0.150***	0.096
Engage[c]	0.551***			0.703***			1.067***			1.019***		
Eng_sch[d]	0.689			0.750**			1.293***			1.263***		
SH x Eng[c]	0.060***	0.235***	0.069	0.077***	0.146***	0.029	0.119***	0.177***	0.065	0.148***	0.210***	0.060

Note. [a] Linear model coefficients are standardized on y; [b] Logit model coefficients are unstandardized

[c] SH, Engage, and SH x Eng are student level variables, group-mean centered;

[d] SH_sch and Eng_sch are school level variables, grand-mean centered

All ΔR^2 significant at p < .001; For *B* and R^2 values * $p < .05$; ** $p < .01$; *** $p < .001$

Figure 1.

Example Interaction Graphs for Student Well-Being Indicators