Intersectionality and cyberbullying: A study of cybervictimization in a Midwestern high school

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Intersectionality and cyberbullying: A study of cybervictimization in a Midwestern high school

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Cyberbullying has been the focus of much empirical research in the past decade. Several scholars have examined the effects of gender on cyberbullying with mixed results. Little research, however, has considered the effects of race and sexuality, and analyzing these demographic characteristics individually (i.e., non-interactively) provides a limited view of the influences of race, gender, and sexuality on cybervictimization. Accordingly, we employ an intersectional approach that captures more fully the nuances between cyberbullying and social location. For example, given the centrality of race in American society, it is surprising that the research on cyberbullying among adolescents finds little evidence of a "race effect." We hypothesize that racial identity moderates the degree to which cybervictimization rates vary by gender and sexuality. Evidence from an original survey of students in a Midwestern high school (N = 752) lends qualified support to our conditional hypotheses: the relationship between gender and victimization is stronger for white students than it is for students of color, but there are no racial differences in the impact of a student’s sexuality and their experiences with cyberbullying.

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1. Introduction

Cyberbullying, the willful and repeated harm inflicted through the medium of electronic text (Patchin & Hinduja, 2006: 152), has been the focus of much empirical research in the past 10 years (see Kowalski, Giumenti, Schroeder, and Lattanner (2014) and Tokunaga (2010) for critical reviews and meta-analyses). According to Willard’s (2007) taxonomy, cyberbullying can take several forms including flaming, cyber harassment, denigration, outing and trickery, exclusion/ostracism, and cyberstalking. While one recent study found that more than half of the students involved in cyberbullying were not simultaneously involved in bullying at school (Kubiszewski, Fontaine, Potard, & Auzoult, 2015), several studies have documented a relationship between traditional forms of bullying and cyberbullying (e.g., Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Kowalski, Morgan, & Limber, 2012; Kwan & Skoric, 2013; Law, Shapka, Hymel, Olson, & Waterhouse, 2012; Vandebosch & Van Cleemput, 2009). For example, Ybarra and Mitchell (2004) found that students involved in Internet harassment were also targets of traditional bullying (1313).

Yet, while cyberbullying shares some commonalities with traditional bullying, the use of technology distinguishes it in at least two important ways. First, technology can allow a perpetrator 24-h access to their victim(s); and, second, technology can allow a perpetrator complete anonymity (Parris, Varjas, Meyers, & Cutts, 2012; Slonje, Smith, & Frisen, 2013; Sticca & Perren, 2013). In fact, when it comes to cyberbullying, the power differential central to traditional forms of bullying (Aalsma & Brown, 2008) is typically found in the anonymity the technology offers the bully as opposed to physical size or strength (Mark & Ratcliffe, 2011).

Research has documented the negative effects associated with bullying for victims, perpetrators, and victim/perpetrators including suicide ideation and attempted suicide (Hepburn, Azrael, Molnar, & Miller, 2012; see also Olweus, 1993b). Similarly, cyberbullying is associated with a number of psychiatric and psychosomatic problems (Sourander et al., 2010). According to Pelfrey and Weber (2013), “cyberbullying in social networking settings may produce an audience of hundreds in a remarkably short time. The humiliation attached to bullying at this scale may cause victimized teenagers to feel that there is no escape” (71; see also Slonje et al., 2013).

Given the pervasive use of technology among elementary, middle and high school students today, it is important to understand which students are most likely to be targets of cyberbullying in order to develop effective interventions. Several scholars have

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examined the effects of gender on cyberbullying with mixed results (see Kowalski et al., 2014). Unfortunately, little research has examined the relationship between race and cyberbullying, and between sexuality1 and cyberbullying. While we believe it is important to explore these individual relationships, doing so may provide a limited view of the influence of race, gender, and sexuality on cybervictimization. In this paper, we call for an intersectional approach that can more fully capture the nuances between social location and cybervictimization. For example, while research on traditional bullying has found that gender and sexuality matter when it comes to perpetration and/or victimization, studies of race and traditional bullying as well as cyberbullying have produced mixed results. Given the centrality of race in American society more generally (see, e.g., Hutchings & Valentino, 2004; Winant, 2000)—and its ability to shape teacher–student, teacher–teacher, and student–student interactions in particular (see Ladson-Billings, 1999, chap. 7)—it is surprising that the research on cyberbullying among adolescents finds little evidence of a “race effect.” Using intersectionality theory, we hypothesize that race moderates the impact that gender and sexuality have on rates of cybervictimization. We test these claims using an original survey of adolescent students in a Midwestern high school, and we find evidence of the conditional impact of race and gender (but not race and sexuality) on experiences of cybervictimization.

2. Previous research

An impressive body of literature exists exploring the relationship between bullying and gender and to a lesser extent bullying and race. For example, Nansel et al.’s (2001) often cited national study of sixth through tenth grade students found that male students were more likely than their female classmates to bully others and to be victimized (see also Olweus, 1993a, 1993b). Further, differences emerged in the type of bullying behavior experienced by male and female students: male students reported higher rates of physical harassment while female students reported higher rates of being bullied through rumors or sexual comments (5). Nansel et al. also found that Hispanic students were more likely to engage in bullying behaviors and Black students were less likely to report being bullied.

In a more recent study, Romero, Wiggs, Valencia, and Bauman (2013) found high rates of victimization, bullying, depressive symptoms, suicidal ideation, and suicide attempts among Latina students. Waasdorp and Bradshaw (2011) found that while both male and female students responded passively to bully victimization, there were gender differences among students who responded aggressively. For example, male students were more likely to endorse both verbally and physically aggressive responses while female students were more likely to endorse verbally aggressive responses. Similarly, Peskin, Tortolero, and Markham’s (2006) research showed that despite no gender differences with regards to general bullying, Black and Hispanic, male, high school students were more likely than their female peers to report being teased, harassed, made fun of by others, and physically victimized. Further, African Americans were more likely to report both higher rates of bullying and victimization.

A few studies have either shown no effects of gender and race on bullying or have produced mixed results. For example, Hammig and Jozkowski’s (2013) research found that victimization was negatively associated with academic achievement for both male and female adolescents. Bauman (2008) found no differences in rates of victimization between male and female high school students, but did detect some racial and ethnic differences; unlike in Nansel et al.’s (2001) study, Black students had the highest rates of victimization while Hispanic students reported the least. Similarly, while Carbone-Lopez, Ebensen, and Brick’s (2010) research on direct and indirect forms of bullying found that male students were more likely to experience physical forms of bullying and female students were more likely to be teased or joked about, they found no gender differences when it came to direct forms of bullying. Further, Carbone-Lopez, Ebensen, and Brick found that race was not related to the likelihood of direct forms of victimization for male or female students and that involvement in delinquency increased the risk of physical victimization equally for male and female students (343).

Unfortunately, there is much less research on bullying and sexuality than there is on race, gender, and bullying. However, studies have shown that non-heterosexual students are much more likely to be bullied than heterosexual students (Bontempo & D’Augelli, 2002; Gruber & Fineran, 2008; Lasser & Tharinger, 2003; Thurlow, 2001). In fact, Fedewa and Ahn’s (2011) meta-analysis of research on bullying found that the gay, lesbian, and bisexual students experienced over 100% more bullying than heterosexual students.

Similar to the literature on traditional bullying, several studies have explored the effects of gender on cyberbullying and cybervictimization. However, unlike the research on traditional bullying and gender, which has typically shown a relationship between the two, the results when it comes to cyberbullying have been inconclusive. In fact, given the anonymity common to cyberbullying, it may be difficult to explore the implications of gender (as well as race and sexuality), particularly with regard to perpetrators (see Mark & Ratliﬀe, 2011).

Still, some studies have found that gender does matter at least in some respects when it comes to cyberbullying. Kowalski et al.’s (2014) meta-analysis of the literature suggests that girls and women may be more susceptible to the negative effects of cyberbullying. Studies by Kowalski and Limber (2007) and Bossler, Holt, and May (2012) found that girls were more likely to be both the perpetrators and victims of cyberbullying. Similarly, Beckman, Haguequist, and Hellström’s study (2013) found that girls were more likely than boys to be cyberbullied and that girls were just as likely as boys to bully cyberbullying (see also Kowalski et al., 2012; Sourander et al., 2010). In contrast, Katz, Fetchenhauer, and Belschak (2009) found that boys were more likely to be bullied both in school and in Internet chatrooms as compared with girls (29; see also Calvete, Orue, Estévez, Villardon, & Padilla, 2010; Dehue, Bolman, & Völlink, 2008), Li (2006) found no gender differences with regard to victimization, but did find that male students were more likely to be bullied online and off, and that female students were more likely to report cyberbullying incidents to adults.

Other research has found few or no gender differences when it comes to cyberbullying (Hinduja & Patchin, 2008; Robson & Witenberg, 2013; Slonje & Smith, 2008; Werner, Bumpus, & Rock, 2010; Ybarra & Mitchell, 2004). Smith et al.’s (2008) research included two studies. In the first, they found that girls were more likely to be victims of cyberbullying, and that when the victim knew the perpetrator they were identified as girls as much or more often than boys. However, the second study showed no gender differences for victimization or perpetration. Still, according to Smith et al., these findings do suggest a greater involvement of girls in cyberbullying as compared with research on traditional forms of bullying. Interestingly, in Elledge et al.’s (2013) research, they found that the effects of gender on cyberbullying were mediated

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1 Scholars use the terms “sexual orientation” and “sexuality” (sometimes interchangeably) when distinguishing heterosexual individuals from non-heterosexual individuals. The former expression (sexual orientation), while technically accurate, has declined in popularity within queer communities, so we prefer the latter, more open-ended terminology (sexuality) and use it consistently throughout the text.
by “provictim” attitudes. Specifically, boys held lower provictim attitudes than girls did, and, when such attitudes were controlled for, girls reported higher frequencies of cyberbullying than boys (706).

Far fewer studies have examined the relationship between race and cyberbullying. Two exceptions are Hinduja and Patchin’s (2008) pilot study of Internet users in the U.S. and Kwan and Skoric’s (2013) study of traditional bullying and Facebook bullying in Singapore. Hinduja and Patchin found that neither race nor gender was important for understanding the nature and extent of cyberbullying. Similarly, Kwan and Skoric’s research found that, while racial minorities were more likely to experience traditional bullying, race was not a factor when it came to bullying on Facebook.

Surprisingly, we were able to find no extant literature on the relationship between cyberbullying and sexuality. While the research on cyberbullying and gender has been mixed, and there are no empirical studies to our knowledge that have found statistically significant relationships between race and cyberbullying, and sexuality and cyberbullying, we nonetheless believe that marginalization does matter when it comes to our understanding of the nature and extent of cybervictimization. Further, we argue that only by employing an intersectional approach can we fully examine the nuances between social location and cybervictimization.

3. Intersectionality theory

Intersectionality theory has its roots in Black feminist thought (Collins, 2000) and multiracial feminism (Zinn & Dill, 1996; see also Belkhir & Barnett, 2001). The basic premise underlying intersectionality theory is that systems of oppression related to race, class, gender, and sexuality (as well as other marked identities) cannot be understood in isolation from one another; each of these types of inequalities is in fact interconnected or interlocking. Intersectionality theorizing assumes that to elucidate the consequences of sexism, for example, one must take into account its relationship to racism and socioeconomic status since everyday experiences in the larger social structure will vary for white, affluent women as opposed to nonwhite, poor women (Frankenburg, 1993; Hurtado, 1996). A significant contribution of intersectionality theory, therefore, is its conceptual approach to understanding inequalities. According to Collins, “Intersectional paradigms remind us that oppression cannot be reduced to one fundamental type, and that oppressions work together in producing injustice” (18; see also Frisky, Maguire, & Reid, 2009).

Along with the rise of intersectionality theory in the academy has emerged important criticisms. In particular, scholars have raised questions about the methodological challenges presented by intersectional theorizing (Cuadraz & Uttal, 1999; McCall, 2005; Simien & Clawson, 2004). Theoretically, for example, intersectionality should allow for the possibility of innumerable constellations of interconnected lines of difference (Davis, 2008). The possibility of endless intersecting inequalities, however, creates a potential methodological pitfall in that some important intersections may be mis-theorized or under-theorized (Hill, 2005). Further, some scholars argue that it is almost impossible from a methodological standpoint to measure multiple oppressions without a resulting additive effect (Bowleg, 2008; West & Fenstermaker, 1995), which fails to capture the complexities of systems of inequality and privilege associated with race, class, gender, and sexuality (King, 1988).

While these criticisms raise methodological concerns we believe researchers should contemplate when employing intersectional theorizing, it is important to acknowledge that intersectionality scholars do not discount the complexities associated with elucidating numerous intersecting systems of oppressions (Collins, 2008). In fact, according to Collins, few theorists can grasp the nuances of scholarship surrounding systems of power related to race, class, gender, sexuality, ability, and age, for example, and therefore intersectional work is typically partial, generally focusing on specific intersections (71). While recognizing the significance of myriad intersecting systems of inequality and privilege is fundamental to intersectionality theory, in everyday life certain intersections are more relevant under certain circumstances than others (Acker, 2006; Battle, 2006; McCall, 2005; Warner, 2008). As Collins points out, “all systems of power are always in every situation, but the salience of any given system of power will vary across time and space” (74).

Dynamic centering, as Collins (2008) refers to it, confers theoretical significance to particular types of oppressions and therefore allows scholars to explore the salience of specific systems of power:

It is similar to taking a snapshot of a graduation ceremony—you know that the event itself is far more comprehensive than what can be captured by the tool of one camera from one angle of vision at one point in time. Each individual snapshot provides a distinctive look at the relationships that are captured within its frame, yet each also provides but one piece of a much larger story. The goal here is not to freeze a slice of lived experience and reify it as truth but rather to examine one way of framing reality that can be combined with many photographs in the album (ideally taken by other people) (69–73).

For the purpose of this study, we confer theoretical significance to the intersections of race and gender, and race and sexuality as we explore the impact of these social locations on cybervictimization. We argue that without employing an intersectional paradigm not only can certain types of inequalities be under-theorized, they may be missed altogether. In sum, if we want to develop effective interventions to help protect marginalized students from cybervictimization, we have to understand how systems of oppression and privilege intersect in ways that produce injustice (Collins, 2000).

4. The purpose of this research

A close reading of the cyberbullying literature leaves readers with the impression that there is no relationship between race and incidents of victimization. However, rather than dismiss this empirical regularity as a “non-finding,” we view the inability of previous studies to uncover racial differences in victimization rates as a research opportunity, and we believe that the relationship between race cybervictimization might be interactive or conditional in nature. For example, a potential explanation for the lack of conclusive evidence of a race → cybervictimization relationship is that conventional analyses do not allow scholars to sort their findings by race and gender (or by race and sexuality) simultaneously. Scholars might observe these elusive “race effects” if they sub-divide their analyses to look for race/gender and race/sexuality interactions. As we illustrate in Fig. 1, a detailed exploration of potentially conditional relationships between race, gender, sexuality, and cybervictimization is the contribution we make to the literature. To borrow terminology from Baron and Kenny (1986), we theorize that racial identity “moderates” the influence a person’s gender and sexuality has on his or her experiences of cybervictimization.

The y-axis in Fig. 1 (shown as a vertical arrow) conveys variations in students’ experiences with cyberbullying. Depending on preference, readers can conceive of the values along the y-axis as representing the “level” (e.g., the frequency of bullying incidents)
or the “likelihood” (e.g., the probability of a person being bullied) of cybervictimization. Likewise, the x-axis (horizontal arrow) records a person’s marginalized status. Insofar as they signal a person’s social location (Kirk & Okazawa-Rey, 2010), demographic characteristics like gender and sexuality become serviceable proxies for a student’s “group position” (i.e., one’s relative standing within a social hierarchy). It makes no difference to our theory whether a student’s group status is real (e.g., reflecting their objective demographic standing) or imagined (based on the belief they are a member of a non-dominant group [or several such groups]) because “actual” and “perceived” marginalization are often correlated (see Anderson, 2006). For example, if we arrayed demographic groups along a continuum anchored by those who are not at all marginalized on one end and those who are very much marginalized on the other, we would expect women who identify as LGBTQ+ to score higher on the y-axis than white heterosexual men do. The rationale for this expectation stems from our understanding of the sociological literature on race. There is a wealth of research confirming that whites in general—and straight white men in particular—benefit (sometimes even unintentionally) from a position of implicit social advantage, while people from non-dominant groups enjoy considerably less privilege (e.g., Bonilla-Silva, 2001; Feagin, 2013; Lipsitz, 2006). Because of their marginalized social positions, nonwhite students, compared to their white classmates, are particularly susceptible to incidents of bullying.

The diagonal lines in Fig. 1 summarize our expectations regarding the conditional impact of race. The slopes of these lines summarize our argument that, regardless of gender and sexuality, a positive effect exists between a student’s marginalized group status and that student’s experiences with cyberbullying. To borrow a medical term, we assume that marginalized group status is a “risk factor” for cybervictimization: those students whose identities locate them within less-privileged social positions are presumably more “at risk” for being bullied. Students from non-marginalized groups are, logically speaking, less prone to cybervictimization because their identities place them at a lower risk. Moreover, we use the distance between the solid (nonwhite students) and the dashed (white students) lines in Fig. 1 to convey our expectation that experiences with cybervictimization will be higher for students of color than for white students, regardless of whatever marginalized group identities a student may also have. Why? Students of color, because of their racial and/or ethnic identity, are already “at risk” of being bullied; while white students benefit from a more privileged social position and therefore start out lower on the cybervictimization scale.

By comparing the steepness of the slopes of these diagonal lines, readers can see our prediction that racial identity, because it is also an indicator of group status, can alter the strength of the relationship between marginalized group status (conceptualized here as gender and sexuality) and the level/likelihood of cybervictimization. Why do we expect the positive relationship between marginalized group status and cybervictimization to be stronger for white students than it will be for students of color? One could attribute racial differences in the impact of gender and sexuality on cyberbullying experiences to what scholars who do experimental research call “ceiling effects” (see Lammers & Badia, 2005, chap. 4). The victimization scores of nonwhite students will increase as those students express additional marginalized group identities; however, since nonwhites are already so high up on the scale, the rise in cybervictimization levels associated with the subsequent expression of marginalized identities will be minimal. Conversely, because their scores start out lower on the scale, the cybervictimization experiences of white students have more room to vary across the categories of the marginalized group status variable. This will translate into a stronger correlation between marginalization and cybervictimization. The claim that race moderates the relationship between marginalized group status and cybervictimization involves two testable propositions:

**Proposition 1.** We expect to observe racial differences in the relationship between students’ gender and their experiences of cybervictimization. Specifically, we anticipate that this relationship is stronger for white students (dashed line) than it is for students of color (solid line).

**Proposition 2.** We expect to observe racial differences in the relationship between students’ sexuality and their experiences of cybervictimization. Specifically, this relationship is presumably stronger for white students (dashed line) than it is for students of color (solid line).

More generally, the inspiration for these expectations stem from our desire to complicate conventional understandings of the overlooked but important role that race plays in the experience of cybervictimization. As we demonstrate in later sections, the analysis of conditional hypotheses allows us to place the influence of race on cyberbullying experiences into richer context.

5. Methodology

To test our propositions, we analyzed data from a climate survey administered to all ninth through twelfth grade students at Bluffview High School. Bluffview is located in a mostly white, rural community in Minnesota with approximately 27,500 residents. At the time this survey was administered to Bluffview students in the spring of 2014, Stoll was in the midst of an ethnographic study with several teachers at the high school. The school principal at the time asked if she would be willing to construct a short, climate survey focused on students’ experiences with bullying. The survey was administered to students during a scheduled study period on a Wednesday in March of 2014. Students who were not present on that day were allowed to take the survey at a later time. In sum, 752 of the 1043 students enrolled in Bluffview High School completed the survey, resulting in a 72% response rate. Sample characteristics for students who completed the survey, along with

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1. Bluffview High School is a pseudonym.
5.1. Replicating (and extending) previous research

To test for the “additive” and “interactive” effects of a student’s race, gender, and sexuality on that student’s experiences with cyberbullying, we use a series of statistical models. For example, the Ordinary Least Squares (OLS) regression equation below seeks to replicate the findings in the cyberbullying literature—while also considering the impact of sexuality—using our sample of high school students:

\[
\tilde{Y} = \beta_0 + \beta_1(\text{Student’s Race}) + \beta_2(\text{Student’s Gender}) + \beta_3(\text{Student’s Sexuality}) + \epsilon_i
\]

OLS allows researchers to estimate the influence of an independent variable on a dependent variable of interest, holding the impact of other independent variables constant (for a technical discussion of regression analysis, see Gujarati, 2004). The regression model represented by Eq. (1) allows us to predict how variations in values of our independent variables contribute to changes in the average level of a student’s self-reported experiences with cyberbullying, and we record these predicted values in \( \tilde{Y} \). On the left-hand-side of this equation, our dependent variable is an additive index of the five survey items measuring the degree to which an individual student (denoted as student \( i \)) has experienced various forms of cyberbullying in the last 30 days.4 A Cronbach’s alpha of 0.81 indicates that our additive index has an acceptable level of reliability (see Nunnally, 1978). We dichotomized each survey item so that students who claim that they have “never” experienced a particular form of cyberbullying get a score of “0,” while all other students (i.e., those whose responses indicate that they have experienced cyberbullying to some degree) get a score of “1.” Based on the coding of the items comprising our additive index, the dependent variable has a scale that ranges from zero (a student did not report that she experienced any of the forms of cybervictimization we query about) to 5 (a student claims that she experienced all five types of cyberbullying). The logic behind our scaling is straightforward: the higher the value a student scores on this additive index, the greater the number of instances of cyberbullying that a student has experienced. The additive index is skewed-right, which means that victimization scores cluster toward the lower end of the scale. Our dependent variable has a mean of .589 in the sample, with a standard deviation of 1.215, and the distribution of our dependent variable tells us that instances of cyberbullying are rare at Bluffview High School.

Our independent variable for race (\( \beta_1 \)) is a dichotomous measure coded so that students who self-identify as being white get a score of 0 and all other students receive a score of 1 (we know from Table 1 that roughly 16% of the students in our sample classify themselves as nonwhite). The independent variables for gender (\( \beta_2 \)) and sexuality (\( \beta_3 \)) have the same coding: students

\footnote{4 One limitation of this survey question is that it does not include explicit response categories for trans persons and/or students who are gender and sexual non-conforming. We are sensitive to the problem of using “sexuality” as a catch-all label that minimizes trans perspectives—or, worse yet, obscures intricate differences between “LGB” and “T” experiences. Accordingly, our decision to focus the analyses on “straight” versus lesbian, gay, and bisexual students (while postponing an exploration of non-conforming, transsexual, and transgender identities) reflects our lack of sufficient data. Readers should not interpret this decision as an expression of anti-trans bias.}

\footnote{5 We remind readers that our dependent variable measures the extent to which a student has been the “victim” (rather than the “perpetrator”) of cyberbullying. See the Appendix for a discussion of how we operationalize the variables in our models.}

Comparison demographics for Bluffview High School, are reported in Table 1.

To measure gender, students were asked: “what is your gender identity?” Response categories included (1) “female”; (2) “male”; (3) “self-identify”; and (4) “prefer not to identify.” To measure race, students were asked: “what is your racial identity?” Response categories reflected those used by the U.S. Census Bureau: (1) “white”; (2) “Black or African American”; (3) “Hispanic or Latino”; (4) “Asian”; (5) “Native Hawaiian or Other Pacific Islander”; (6) “American Indian or Alaska Native”; (7) “self-identify”; and (8) “prefer not to identify.” Finally, sexuality was measured using the following question: “what is your sexual orientation?” Response categories included: (1) “heterosexual or straight”; (2) “gay or lesbian”; (3) “bisexual”; (4) “self-identify”; and (5) “prefer not to identify.”

### Table 1

<table>
<thead>
<tr>
<th>Sexuality*</th>
<th>Climate survey sample (%)</th>
<th>Bluffview High School population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heterosexual</td>
<td>92</td>
<td>82</td>
</tr>
<tr>
<td>Non-heterosexual</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>Sexuality</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>84</td>
<td>88</td>
</tr>
<tr>
<td>Nonwhite</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
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<td></td>
</tr>
<tr>
<td>Boys</td>
<td>50</td>
<td>53</td>
</tr>
<tr>
<td>Girls</td>
<td>50</td>
<td>47</td>
</tr>
</tbody>
</table>

Notes: Table entries are percentages. Demographics with an asterisk (*) are not available for Bluffview High School population.
who self-report as being female (about 50% of the sample) or non-heterosexual (roughly 8.3%) get a score of one; all other students are coded as zero. The error term in our regression model (\(b\)) keeps track of the discrepancy between a student’s self-reported cybervictimization score and the model’s linear prediction (in this case, the arithmetic average) of that student’s experience with this form of bullying. In regression analysis, negative coefficients represent inverse relationships between an independent and dependent variable (e.g., an increase in that variable predicts a decrease in our measure of cyberbullying), while non-negative regression estimates denote positive associations (for example, levels of cyberbullying tend to increase as the values in an independent variable rises). Based on our understanding of the cyberbullying literature, the “replication and extension” model predicts that:

- \(b_1 > 0\) (i.e., students of color [compared to their whites classmates] will experience a greater degree of cyberbullying),
- \(b_2 > 0\) (i.e., the female students at Bluffview High School will report more incidents of bullying than the male students will), and
- \(b_3 > 0\) (i.e., victimization rates are higher for non-heterosexual students than they are for heterosexual students).^6

We test these hypotheses in Table 2. The first column of results in this table contains an OLS regression analysis of the impact of race and gender on self-reported cyberbullying experiences. The coefficient estimates appear in the cells of the table, with their standard errors (S.E.) in parentheses. Consistent with several studies (see Beckman et al., 2013; Bossler et al., 2012; Kowalski & Limber, 2007; Kowalski et al., 2014), we discovered gender differences in students’ experiences with cyberbullying (\(b_1 = .33,\) S.E. = .13, \(p < .001\)). Holding the values of other variables in the model constant, a one-unit increase in our gender variable (in this case, moving from 0 = Boy to 1 = Girl) corresponds with a rise of .33 in the average number of cyberbullying instances a student reports. Since the scale of our dependent variable ranges from zero in the average number of cybervictimization instances a student reports. Since the scale of our dependent variable ranges from zero to five, this “gender effect” suggests that female students at Bluffview High School (compared to their male classmates) typically experience roughly one-third of an additional instance of cyberbullying.

We find a similar result for sexuality. Holding other variables constant, a one-unit shift in sexuality (i.e., from “heterosexual” to “non-heterosexual”) contributes to a positive and statistically significant change in a student’s average cybervictimization score (\(b_2 = .61,\) S.E. = .17, \(p < .001\)), which translates into non-heterosexual students experiencing more than half an additional instance of cyberbullying. This finding, while intuitive, represents a small contribution to the cyberbullying literature, as we provide further evidence, at least in our high school sample, that non-heterosexual students tend to experience considerably more incidents of cybervictimization (Bontempo & D’Augelli, 2002; Fedewa & Ahn, 2011; Gruber & Fineran, 2008; Lasser & Tharinger, 2003; Thurlow, 2001 uncover similar results).

We fail to reject the null hypothesis regarding the association between race and cybervictimization. A unit-shift in race (from “white” to “nonwhite”) lowers the predicted number of cyberbullying experiences slightly, holding other variables constant; however, this result does not reach statistical significance (\(b_3 = -.031,\) S.E. = .13, \(p > .05\)). Our null finding accords with the results commonly found in the cyberbullying literature; authors in this field generally conclude that race exerts little impact on victimization rates (see Hinduja & Patchin, 2008; Kwan & Skoric, 2013). Moreover, the lack of a clear “race effect” is not surprising if we consider, as noted in the previous section, that race and gender (and race and sexuality) might cancel one another out as predictors of cybervictimization and therefore require a more complex set of hypotheses.

5.2. Testing conditional hypotheses

As McCall (2005) notes while discussing the importance of “categorical complexity” when studying overlapping demographic identities in quantitative or mixed-methods research:

Indeed, there is much hostility toward such complexity: most journals are devoted to additive linear models and incremental improvements in already well-developed bodies of research. In the language of statistics, the analysis of intersectionality usually requires the use of “interaction effects” or “multilevel,” “hierarchical,” “ecological,” or “contextual” modeling—all of which introduce more complexity in estimation and interpretation than the additive linear model. Such models ask not simply about the effect of race on income but how that effect differs for men versus women, or for highly educated men versus poorly educated men, and so forth (1758).

We find McCall’s arguments regarding the suitability of employing quantitative approaches to be compelling, and we acknowledge that such approaches are controversial (see

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^6 Each of these predictions assumes a null hypothesis of no relationship between race, gender, sexuality, and the experiences of cybervictimization (i.e., \(b_1 = b_2 = b_3 = 0\)).
Nonetheless, our goal here is to marry insights from intersectionality theory with statistical techniques. Specifically, we move beyond additive analyses of the effect of race on cybervictimization to explore its conditional influence on other potential demographic categories: gender and sexuality. For example, Eq. (1)—an additive linear model that reflects current scholarly practices—assumes that the relationship between gender and cybervictimization (and between sexuality and cybervictimization) is identical across the categories of our race variable (see Brambor, Clark, & Golder, 2006; Friedrich, 1982; Skrivanek, 2009 for further details about additive models with dichotomous variables). As we illustrate in Fig. 1, we believe that additive approaches oversimplify the complex topics of social location and victimization, and we posit that race “conditions” (or “moderates”) the degree to which a student’s gender or sexuality relates to his or her experiences with cyberbullying. To explore the conditional relationships between race, gender, and cybervictimization (Proposition 1), we use the following interactive model:

\[ Y_{\text{Cyberbullying Experiences}} = \beta_0 + \beta_1 (\text{Student’s Race}) + \beta_2 (\text{Student’s Gender}) + \beta_3 (\text{Race} \times \text{Gender}) + \epsilon_i \]  

(2)

Eq. (2) is similar to the first one, except it now includes a multiplicative term for the conditional effects of the intersectional race/gender variable \((\beta_3)\) on the estimated values of our dependent variable \((Y)\). Specifically, our first proposition posits that \(\beta_3 < 0\) (i.e., in Eq. (2), the impact of gender on cybervictimization is weaker for students of color than it is for white students).

Similarly, we explore the conditional influence of race and sexuality (Proposition 2) using another interactive model:

\[ Y_{\text{Cyberbullying Experiences}} = \beta_0 + \beta_1 (\text{Student’s Race}) + \beta_2 (\text{Student’s Sexuality}) + \beta_3 (\text{Race} \times \text{Sexuality}) + \epsilon_i \]  

(3)

For Eq. (3), we hypothesize that \(\beta_3 < 0\) (i.e., the impact of sexuality on cyberbullying experiences is weaker for students of color than it is for white students).⁷

In the remaining two columns of Table 2, we list the coefficient estimates for the OLS regression models with interaction terms. To supplement the regression results, we also illustrate the conditional influence of race and gender (and race and sexuality) on cybervictimization in Figs. 2 and 3, respectively. The constant in the regression model examining the conditional impact of race and gender on cybervictimization (see the second column of coefficients in Table 2) is .36. This means that, based on our current scale, readers should expect a student to experience an average of roughly two-thirds of a cyberbullying experience when all our independent variables are set to a value of zero. In plain English, setting all our independent variables to zero is equivalent to saying that we are examining the average victimization scores of the white male students in our sample (i.e., when Gender = 0 and Race = 0).

The regression estimate for race in column 2 is positive (\(\beta_1 = .28, \text{S.E.} = .18\)), but it is statistically non-significant. In a model with interaction terms, the coefficient estimates for race represent the impact of a student’s racial identity on cyberbullying experiences when the gender variable is set to a value of zero. In other words, we are exploring the effect of race among the white male students in our sample. Therefore, if we move from looking at white male students (Race = 0) to nonwhite male students (Race = 1), then the average experience of cybervictimization increases from .357 to approximately .640, which is an increase of approximately .28 (notice the difference between the left ends of the solid and dashed lines in Fig. 2). Put differently, despite nonwhites reporting they have suffered through more instances of cybervictimization, race does not exert any meaningful influence over the perceptions of male students at Bluffview High School.

Unlike race, the coefficient estimate for the gender variable is positive and statistically significant (\(\beta_2 = .47, \text{S.E.} = .10\), and \(p < .001\)). We interpret this result as the impact of gender on the white students’ cyberbullying attitudes (i.e., when Race is set to a value of zero). Put simply, this “gender effect” means that the average level of self-reported cyberbullying experiences increases across gender: it moves from approximately .357 among white male students to roughly .826 among white female students (see the dashed line in Fig. 2). This is a difference of .826 – .357 = 469 (or .47, if we round up), and, as noted above, this increase is statistically significant.

As we predicted, the regression estimate for the interaction term in Eq. (2) has a negative sign (\(\beta_3 = -.050, \text{S.E.} = .26\)), and it is statistically significant at the .10 level—in fact, with a p-value of .053, it barely misses the conventional significance cutoff of \(p = .05\). This tells us that the effect of gender on self-reported experiences with cyberbullying is smaller for persons of color. Recall that the “gender effect” for white students is roughly .468. The “gender effect” for nonwhite students is –0.029; this is a difference of approximately –.029 – .468 = –.497, which rounds to –.50. Overall, the patterns in Table 1 and Fig. 2 provide some evidence of racial differences in the relationship between gender and experiences with cybervictimization. Consistent with Proposition 1, the

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⁷ The predictions in Eqs. (2) and (3) each assume a null hypothesis of no conditional relationship between race, gender, sexuality, and cyberbullying (i.e., \(\beta_3 = 0\)).
slopes of the relationship between gender and cybervictimization is steeper for white students (dashed line) and more shallow for students of color (solid line), and the evidence supports the argument that this “gender effect” is strongest for the white students at Bluftview High School.

We use a similar logic when we interpret the results in the regression model examining the conditional impact of race and sexuality on cyberbullying (see Fig. 3 and the third column of results in Table 2). The constant for this interactive model is .11, which is the average cyberbullying score for white heterosexual students (i.e., when Race = 0 and Sexuality = 0). In Eq. (3), the OLS estimate for race in the interactive model ($\beta_1 = -0.101, S.E. = .14, p < .05$) tells us the influence of race on cybervictimization among heterosexual students (i.e., when Sexuality = 0). As can be seen from the sheer closeness of the left ends of the solid and dashed lines in Fig. 3, this difference of $-.523 = -.533$ is both small in magnitude and statistically non-significant. Overall, the results show that white students who are non-heterosexual students’ self-reported experiences of cybervictimization.

Conversely, the coefficient estimates for sexuality in the interactive model ($\beta_2 = .89, S.E. = .19$) record the impact of sexuality on the cyberbullying experiences of white students. Among white heterosexual students (Race = 0 and Sexuality = 1), the average cyberbullying score is .533; but for white students who are non-heterosexual, the average jumps to 1.225! This increase in cybervictimization across the categories of our sexuality variable is 1.225 − .553 = .672 (or .69 after rounding), which is a large and statistically significant difference between straight and LGBQ+ students ($p < .001$). Readers can see this conditional “sexuality effect” more clearly by tracing the steep slope of the dashed line in Fig. 3.

The OLS estimate for the interaction term in the third column of Table 2 ($\beta_3 = -.14, S.E. = .40$) represents the change in the influence of sexuality on cyberbullying when we move from examining white students to looking at persons of color. We already know that the effect of sexuality on cyberbullying is .62 for whites. What you cannot see in Table 2, but you can infer from Fig. 3, is that the effect of sexuality is approximately .544 for nonwhites. When Race = 0, the average number of cyberbullying experiences is .523 and 1.077 for heterosexual and non-heterosexual students, respectively, which is a difference of 1.077 − .523 = .554. The interaction term, therefore, demonstrates the difference in the effects of sexuality on the cyberbullying experiences of white and nonwhite students (.554 − .692 = −.138, which rounds up to .14). Fig. 3 reveals that, as expected, the strength of the association between sexuality and cybervictimization is slightly stronger for white students (you can infer this from the differences in the slopes of the solid and dashed lines); however, this conditional effect is statistically non-significant, which means that we find no empirical support for Proposition 2.

5.3. Summary of results

Using interactive statistical models that were informed by an intersectional approach, we found evidence of a “race effect.” On the one hand, the relationship between gender and cybervictimization is weaker among students of color than it is for white students, and this result comports with our expectations (see Proposition 1). The interactive effect of race and sexuality on cyberbullying experiences moves in the expected direction (see Proposition 2), but the result is not statistically significant. Overall, these results lend credence to our assertion that it is important to explore the complex manner in which race, gender, and sexuality intersect to influence experiences of cybervictimization. To borrow McCall’s terminology (2005), we hope that future analyses of this kind will continue the conversation about “[demographic] categorical complexity.” For example, evidence from this research suggests that the literature on cyberbullying does have a “race effect” after all, one that works indirectly—particularly through race and gender, but not as much through race and sexuality—to influence students’ self-reported levels of cybervictimization. As such, these results contribute to the cyberbullying literature by underscoring the importance of studying the influence of intersectional identities on victimization rates. We discuss the limitations and implications of our findings below, and we suggest avenues for future research.

6. Discussion and conclusion

Before concluding, it is important to consider the limitations of the current study and some possible strategies for addressing cyberbullying and cybervictimization. First, this study focuses exclusively on the ways that race and gender, and race and sexuality, intersect to produce differences in cybervictimization. We believe, however, that social location also matters when it comes to cyberbullying. Focusing only on victimization is an important limitation given that research by Sourander et al. (2010) finds that individuals who are both bullies and victims appear to experience more psychological and psychosomatic problems than individuals who are either bullies or victims. We therefore call on future research to explore whether race may also moderate the effects of gender and sexuality when it comes to experiences of both cyberbullying and cybervictimization. In addition, due to the homogeneity of our sample with regards to race and sexuality, we were forced to collapse these two categories in our analyses, forgoing the level of nuance we would have liked.

When it comes to addressing cyberbullying and cybervictimization, it is important to remember this type of bullying often requires different strategies for prevention and intervention than traditional forms (Pelfrey & Weber, 2013). According to Greene (2006), strategies for addressing traditional forms of bullying: implicitly assume that perpetrators are known by their targeted victims, that there is a power imbalance between the bully and the victim, and that the bullying behaviors occur on school grounds. Cyberbullying frequently violates all three of these assumptions, although the power imbalance requirement could be reinterpreted as having more facility and adeptness (thus power) with electronic manipulations. Furthermore, neither state nor national anti-bullying laws apply to electronic forms of bullying (68; see also Patchin and Hinduja (2006)).

Nonetheless, similar to traditional anti-bullying programs, scholars suggest it is important to include adults when developing strategies for addressing cyberbullying and cybervictimization. For example, Hinduja and Patchin (2013) found that students who thought their parents or other adults at school would sanction them for engaging in bullying and cyberbullying were significantly less likely to participate. According to Hinduja and Patchin, “It is clear that when parents or teachers at school explicitly convey to their children and students that bullying behaviors are not appropriate, the youth are less likely to participate in those behaviors.” (717) Hinduja and Patchin found this to be the case for students, regardless of whether they associated with peers who bullied. Effective anti-bullying programs must therefore include parents, teachers, and administrators, and educate them on both the range of direct behaviors and indirect behaviors (which are more likely to be overlooked) that constitute bullying as well as on strategies for creating school climates conducive to reporting all forms of bullying and victimization (Carbone-Lopez et al., 2010: 345).

Further, Sourander et al. (2010) suggest that effective anti-bullying programs must include not only school-wide and classroom prevention and intervention, but also clear and consistent norms for healthy cyberbehavior. Because of the health risks associated with cyberbullying and cybervictimization, Sourander et al.
also suggest that questions regarding these behaviors be included in adolescent assessments of mental health. Finally, as the results of this study show, it is also important when developing anti-bullying programs to consider the ways that social location can impact experiences of victimization. Clearly, a one-size-fits-all approach will not work if different experiences of cybervictimization exist across marginalized groups.

In sum, unlike the literature on traditional bullying, which typically finds the presence of a “gender effect” in which male students and female students tend to differ in their experiences of both perpetration and/or victimization, the literature on cyberbullying tends to be more mixed. Nonetheless, there are studies that have found gender still matters when it comes to cyberbullying and cybervictimization (Kowalski et al., 2014). The literature is even less settled, however, when discussing racial differences in cybervictimization rates, and, to our knowledge, there is little (if any) research on the “sexuality effect.” By including measures of race and sexuality as predictors of cyberbullying experiences, this paper seeks to encourage scholars to consider the impact of these important but currently understudied social identities. Beyond simply expanding the scholarly conversation, we also seek to add depth to discussions about the influence of marginalized group status on cybervictimization. Specifically, the mixed findings regarding a “race effect” motivated us to explore the possibility that race works indirectly, through other identities like gender and sexuality, to influence the degree to which the students at Bluffview High School encounter incidents of cyberbullying.

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