

Retrospective Study of Victimization by Bullying among Sexual
Minority and Majority College Students: Exploring External
Sources of Support to Promote Resilience

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DEDICATION

To LGBTQ youth and allies. You are not alone.

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Abstract

The purpose of this retrospective study was to compare rates of victimization by general, cyber-, and homophobic bullying, trauma, and protective factors of perceived family support, peer support, school membership, and school safety between sexual minority ($n = 55$) and majority ($n = 171$) college students during their last year of high school. Additionally, using the Fergus and Zimmerman (2005) protective factor model of resilience, multiple regression analyses were conducted among LGBTQ and heterosexual participants to assess whether or not the protective factors moderated the relation between victimization by general and cyberbullying and perceived level of trauma due to victimization.

Results revealed significant differences between LGBTQ and heterosexual students across all outcome variables. LGBTQ students reported significantly higher rates of general bullying, cyberbullying and homophobic bullying victimization as well as trauma due to general and cyberbullying than heterosexual students. Additionally, LGBTQ students rated perceptions of family support, peer support, school membership, and school safety significantly lower than heterosexual students.

The protective factors impacted trauma due to victimization differently among the sexual orientation groups. For LGBTQ students, none of the protective factors moderated the relation between general bullying victimization and perceived trauma due to general bullying. However, perception of school safety was a significant moderator on the effects of cyberbullying victimization and trauma due to cyberbullying. LGBTQ students with high ratings of school safety had lower levels of perceived trauma due to cyberbullying.

Among the heterosexual students, peer support moderated the impact of general bullying victimization on levels of trauma due to general bullying. Family support and school

membership were significant moderators between cyberbullying trauma victimization and perceived trauma due to cyberbullying for heterosexual students. Implications suggest the importance in establishing school-based supports, such as anti-bullying policies and procedures and Gay Straight Alliances, which help instill feelings of safety and membership among LGBTQ students within the high school environment. Future research directions include comparing age of sexual orientation disclosure with rates of victimization and support, which can be assessed through the implementation of school district surveys.

Keywords: Sexual minority students, LGBTQ, victimization, bullying, cyberbullying, homophobic bullying, school membership, school safety, family support, peer support

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LIST OF ABBREVIATIONS

CBS	Cyberbullying Scale
CBV	Cyberbullying Victimization
C-trauma	Trauma due to Cyberbullying
GBS	General Bullying Scale
GBV	General Bullying Victimization
G-trauma	Trauma due to General Bullying
HBS	Homophobic Bullying Scale
HBV	Homophobic Bullying Victimization
IES	Impact of Events Scale
LGB	Lesbian, Gay, Bisexual
LGBQ	Lesbian, Gay, Bisexual, Questioning
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Questioning
PSS-Fa	Perceived Social Support from Family
PSS-Fr	Perceived Social Support from Friends
PSSM	Psychological Sense of School Membership
PSS	Perceptions of School Safety

CHAPTER I:

INTRODUCTION

The recent US Supreme Court Act ruling in favor of gay marriage in 2013, the repeal of the military's "Don't Ask, Don't Tell" policy in 2012, as well as United States anti-discrimination laws based on sexual orientation make it seem that US American culture is becoming more accepting of people who identify as LGBTQ. However, despite these recent advances in the LGBTQ rights movement, heterosexism, in which attitudes and beliefs that heterosexual identities instill certain privileges and are valued over LGBTQ identities, appear to constitute the norm within the United States. For instance, around 50% of US Americans perceive homosexuality as morally wrong, do not support gay marriage, and do not believe gay couples should have the right to adopt children (Jones, 2009). Other examples of both overt and covert forms of heterosexism include, making anti-gay jokes, acts of LGBTQ-based bullying, family members rejecting LGBTQ individuals, and negative images of LGBTQ individuals on television and in movies (Szymanski, 2013).

Before the 1960s, it was not common for individuals with LGBTQ orientations to disclose their sexual identities. For the most part, LGBTQ individuals tended to remain "hidden in the closet" out of fear of public scrutiny, harassment, and discrimination (see Sullivan, 1990). A research study conducted in the 1960s deemed the average disclosure of sexual orientation status, or "coming out", age, as 19 years-old (Dank, 1972). However, sexual orientation disclosure now occurs at a younger age, often around 15 or 16 years-old, which indicates high school is becoming the typical time where students publicly identify as LGBTQ (D'Augelli, Grossman, & Starks, 2008; Floyd & Stein, 2002).

As LGBTQ students disclose their sexual identities to others, they also may be subjected to bullying within their high school environments. Homophobic bullying, which is a form of bullying because of one's sexual orientation, can result when LGBTQ individuals "come out" in their high school (Chesir-Teran & Hughes, 2009). Unfortunately, schools are inconsistent in including policies that address anti-bullying behaviors related to sexual orientation discrimination. Kosciw, Greytak, Bartkiewicz, Boesen, and Palmer (2012) sampled 8,584 LGBTQ students (ages 13-20) from all 50 US states. One in five LGBTQ participants indicated their schools had no policies that addressed bullying whatsoever or they weren't aware of these policies. However, 79.7% did indicate their school had bullying policies, but only 22% reported these policies addressed LGBTQ-related bullying incidents. Along with inconsistent anti-bullying policies, high schools may not be effectively training staff on how to handle incidents of bullying within the school climate. Among LGBTQ students who had been bullied and had reported the incident to school staff, 36.7% indicated staff did nothing about it (Kosciw et al., 2012). These results point to the need for schools to be more accommodating to youth who identify as LGBTQ. Schools with lax anti-bullying policies on LGBTQ-based harassment as well as a lack of school-based support and resources for LGBTQ youth can create unwelcoming and hostile school environments. Schools without a curriculum that educates students regarding LGBTQ issues may be encouraging sexual majority students to develop and maintain prejudices and biased beliefs about sexual minority students.

Overall Purpose of Study

The overall purpose of this retrospective study is to investigate potential protective factors that may contribute to resilience and a more positive school environment among LGBTQ students who were victims of bullying and/or cyberbullying in their last year of high school. I

chose to conduct a retrospective study due to the difficult nature of gaining consent and assent in East Tennessee from high school administrators, parents, and students regarding sexual orientation status. Also, I did not want to have students reflect across their entire four years of high school as that may increase bias in reporting. By limiting reflections to their last year of high school, it was my hope to recruit more first year students, more recently out of high school, which would also increase participants' accuracy in responding to the survey items. To determine which protective factors to include in this study, I reviewed previous research on bullying and cyberbullying victimization among high school-aged LGBTQ students. The Gay, Lesbian, & Straight Education Network (GLSEN) conducts annual safe schools surveys across the United States. Their findings revealed that increasing LGBTQ students' feelings of school safety and promoting a positive school climate can help reduce rates of school-based LGBTQ bullying. Family and peer support have also been demonstrated in the research literature as additional supportive factors among LGBTQ students who have been victimized by bullying. I will summarize results from relevant studies in Chapter 2.

The current study also stems from previous research my colleagues and I conducted. We investigated high school-based rates of GBV and CBV among LGBTQ compared to non-LGBTQ undergraduates. In this study, we also included an investigation of some possible protective factors, seeking to compare these perceived factors across LGBTQ and non-LGBTQ groups (Buck, Black, Bain, & Ingle, 2013). We found that LGBTQ undergraduates reported significantly lower levels of family support, school connectedness, and school safety in their final high school year. This group also indicated a significantly higher rate of GBV compared to non-LGBTQ participants. The LGBTQ and non-LGBTQ groups displayed no significant difference in CBV rates. We also investigated whether the protective factors (e.g., school

connectedness, school safety, and family support) would predict GBV and CBV across groups. All three protective factors significantly predicted victimization by both types of bullying with school safety as the strongest predictor. The less safe participants felt in their school, the more likely participants experienced CBV and GBV.

The purpose of the current study was to investigate protective factors used in the previous study (i.e., family support, school membership, and school safety) along with the additional protective factor of peer support that may help decrease traumatic symptoms that result from GBV and CBV across sexual minority and majority groups. I compared rates of victimization experiences as well as perceptions of each of the protective factors between the sexual orientation groups. As a school psychologist, it is important for me to be aware that LGBTQ students may be subjected to victimization while at school, and may not have the same level of support compared to their heterosexual peers. By gathering information on rates of victimization and levels of support between LGBTQ and non-LGBTQ bully-victims, my results can better inform school administrators regarding the benefits of developing and implementing anti-bullying policies and school-based resources for LGBTQ high school students. By establishing strong external supports within (i.e., peer support, school safety, and feelings of school membership) and outside of the school environment (i.e., family support, peer support), it is hopeful that sexual minority students can “come out” without fearing harassment or abuse because of their sexual orientation.

CHAPTER II:

LITERATURE REVIEW

In the following section, I will provide a descriptive background for the types of bullying addressed in the refereed literature, and review recent studies which have explored the negative school-based experiences of LGBTQ adolescents and their sexual majority peers. Following overviews of this research, I will discuss relevant findings regarding the psychological and behavioral outcomes related to GBV, HBV, and CBV. I will then explore potential external sources of support that may contribute to resilience among sexual minority and majority bully-victims.

Overview of Types of Bullying

The terms “bullying victimization”, “harassment”, “homophobic victimization”, and “abuse” tend to be used interchangeably throughout the refereed literature. In the following sections, to provide a more accurate description of victimization by bullying as experienced by LGBTQ youth, I will describe studies based upon three types of victimization: general, homophobic, and cyber.

General bullying victimization (GBV). Unfortunately, in spite of advances in the gay rights movement, sexual minority youth still report increased levels of sexual identity-based harassment within school compared to their heterosexual peers (Buck et al., 2013; Poteat, Mereish, DiGiovanni, & Koenig, 2011; Williams, Connolly, Pepler, & Craig, 2005). Bullying can also be referred to as “aggressive actions” or “harassment” and can be classified by types, such as relational (i.e., excluding someone from his or her social group or rumor spreading), verbal (i.e., name calling) or physical (i.e., punching, shoving, or kicking someone). Relational

bullying is considered an indirect form of bullying while physical and verbal are referred to as direct types of bullying.

What motivates a person to engage in bullying behavior can vary across individuals. Some bullies may be acting aggressively through fear, hatred, bias, or ignorance towards the victim. Negative attitudes about victims can stem from stereotyping as a result of social categorization and the out-group homogeneity effect as explained by social identity theory (Tajfel, 1972). Others may be motivated by peer pressure, and/or retaliation against the victim for perceived wrongdoing (Rivers, 2011).

Whatever the motivation to engage in bullying, researchers have typically incorporated overlapping features of bullying behavior in an attempt to arrive at an operational definition. Bullying involves: 1) the intention to cause harm to another person (i.e., the victim); 2) an imbalance of power between bully and victim, where the bully most often dominates the victim; and 3) the bullying behavior must consistently be occurring over a period of time (Olweus, 2003; Rivers, 2011). For example, if a student gets shoved in the hallway by the same individual or group on a daily basis for over a week, then that would be considered bullying. However, a single shoving incident would not qualify according to this definition. Most commonly, bullying is measured using just the last component of Olweus's (2003) definition, where the bullying event has occurred over a period of time (i.e., within the last month, year, etc.). I will refer to experiences of bullying related to relational or physical bullying without explanation of the underlying motivation as general bullying victimization (GBV).

Homophobic bullying victimization (HBV). HBV is motivated by inherent bias against LGBTQ individuals (Poteat et al., 2011). It includes the same types of experiences as GBV (i.e., verbal, relational, and/or physical). The main difference is the underlying motivation for the

bully to engage in the victimizing behavior. A homophobic bully endorses heterosexist beliefs and attitudes and intends to cause harm to the victim simply because he or she identifies as LGBTQ or endorses pro-LGBTQ beliefs. Both heterosexual and LGBTQ individuals can be the targets of HBV (Poteat & Espelage, 2007). The frequency of both GBV and HBV among sexual majority and sexual minority students as well as within LGBTQ sub-groups will provide an indication of the increased need for schools to develop policies to address LGBTQ bullying incidents.

LGBTQ rates of GBV and HBV. Across studies investigating GBV and HBV, researchers have used composite scores that represent a variety of bullying experiences: physical (i.e. “I got hit, slapped, shoved.”), relational (i.e., “I got picked on”), and verbal (i.e., “I got called rude, nasty names”). Therefore, studies comparing rates of bullying among sexual minority students may be capturing different aspects of victimization. Regardless of how GBV or HBV is measured, LGBTQ students tend to report significantly higher rates of GBV and HBV compared to heterosexual students.

Poteat and colleagues (2011) sampled students in Grades 7 through 12 in the Midwest ($n = 15,923$) on frequency of GBV and HBV. Self-reported LGBTQ students ($n = 926$) indicated significantly higher rates of GBV and HBV than heterosexual students. These results are consistent with another large and representative study of 13,213 middle and high school students from the same Midwestern region (Robinson & Espelage, 2011). On average, LGBTQ students ($n = 745$) were 17 times more likely to have experienced GBV compared to their heterosexual peers. Burton, Marshal, Chisolm, Sucato, and Friedman (2013) also found higher rates of HBV among sexual minority students ($n = 55$) compared to sexual majority students ($n = 137$) in their longitudinal study of adolescents (ages 14-19) from Pennsylvania and Ohio. Rates of GBV and

HBV also appear higher for LGBTQ students outside of the United States. In a sample of 1,598 Canadian high school students (ages 14-19 years-old), Williams and colleagues (2005) found higher LGBQ ($n = 97$) GBV experiences compared to heterosexual youth ($n = 1,501$).

Other researchers have found significant group differences in rates of GBV as well as HBV among those who are questioning compared to LGB and heterosexual students. For instance, Espelage, Aragon, Birkett, and Koenig's (2008) study compared questioning students ($n = 932$), LGB students ($n = 1,065$) and heterosexual students ($n = 11,924$) on levels of GBV and HBV. All participants were from 18 high schools within a Midwestern county. Questioning students reported significantly higher rates of GBV and HBV compared to both LGB and heterosexual students. Birkett, Espelage, and Koenig (2009) found a similar result in their Midwestern sample of 7th and 8th graders ($n = 7,376$). Questioning students ($n = 342$) reported higher rates of GBV and HBV compared to LGB ($n = 776$) and heterosexual ($n = 5,549$) students. However, results from these two studies are inconsistent with Williams and colleagues' (2005) study, which found similar rates of GBV between questioning ($n = 53$) and LGB ($n = 44$) students. All of the researchers (Birkett et al., 2009; Espelage et al., 2008; and Williams et al., 2005) measured GBV as how often within one to two months participants experienced being threatened, teased, picked on, punched, and pushed.

The following studies did not use heterosexual comparison groups, but did explore gender differences on victimization within LGBTQ youth. LGBTQ youth ($n = 350$), ages 14-21, representing 20 states, 5 Canadian provinces, and New Zealand, answered Likert-type scale items about their direct and indirect experiences of HBV. D'Augelli, Pilkington, and Hershberger (2002) computed three composite scores for HBV by type: verbal, physical, and overall. The authors found significant within-group differences as well as gender differences for

LGBTQ homophobic bully-victims. Males reported significantly higher rates of verbal abuse, physical abuse (i.e., threatened with violence, objects thrown at them), and overall HBV than females. LGBTQ participants who were open about their sexual orientation received significantly more verbal forms of HBV regardless of gender.

Chesir-Teran and Hughes (2009) sampled 2,037 LGBQ students (ages 14-18 years-old) across the regional United States on HBV. LGBTQ students who had openly disclosed their sexual orientation to others reported significantly higher rates of HBV than those who were not “out.” Similarly, D’Augelli and colleagues’ (2002) study, gay, bisexual, and questioning males reported higher rates of HBV than sexual minority females. This finding was also consistent in Russell, Ryan, Toomey, Diaz, and Sanchez’s (2011) study of 245 LGBT youth (ages 21-25) from the San Francisco area. Males who were gay, bisexual, or transgender indicated significantly higher rates of HBV than females. Gays and lesbians also indicated higher rates of HBV than bisexual students. Russell and colleagues (2011) did not report on group differences among transgender and questioning students.

Cyberbullying victimization (CBV). A fairly recent, and therefore less frequently studied form of victimization includes bullying through the use of electronic devices (i.e., cellphones, social media sites, instant messaging, the Internet, etc.), or “cyberbullying”. This form of bullying includes both relational and verbal types that are characteristic of both GBV and HBV. The most salient difference from GBV lies in the degree of anonymity or deindividuation that occurs in cyberbullying. Electronic devices allow the bully’s identity to be more easily hidden from the victim’s awareness. For example, the cyberbully can adopt a pseudonym through an online account, or if using a cellphone, block his or her number before engaging in an act of cyberbullying. This allows the cyberbully to victimize others with a lesser

chance of being “caught in the act” and punished. Examples of cyberbullying include (a) sending messages to another person that contain harassing or hurtful comments via e-mail, text message, or instant messaging, (b) using a pseudonym and posting hateful comments about a peer on a social networking site, such as Facebook, (c) creating a website that displays negative pictures or hurtful comments about a peer, and (d) making a video of another peer getting physically assaulted and e-mailing it to others at school (Cooper & Blumenfeld, 2012).

Among the few studies conducted investigating CBV among sexual minority students, there are inconsistent reports regarding group differences in levels of CBV between sexual majority and minority students. Robinson and Espelage (2011) found significant differences in CBV from their study detailed above. The LGBTQ group reported significantly higher rates of CBV (34.0%) compared to heterosexual students (19.2%). Schneider, O’Donnell, Stueve, and Coulter (2011) found similar findings among their sample of 20,406 high school students from the Massachusetts area. Significantly more LGBTQ students ($n = 1,261$) reported higher rates of CBV (33.1%) compared to heterosexual students ($n = 18,795$; 14.5%).

However, not all researchers report similar findings in regard to higher levels of CBV among sexual minority students. Johnson and colleagues (2011) found similar rates of cyberbullying experiences between heterosexual ($n = 733$) and LGBTQ female students ($n = 99$) from the Boston area. A sample of sexual majority and minority males was not included in this study which makes their results difficult to generalize across sexual orientation groups.

Studies that have investigated rates of CBV among only LGBTQ students, with no heterosexual comparison group, document high levels of CBV. Kosciw and colleagues (2012) conducted a national survey on rates of various types of bullying within a sample of 8,584 LGBTQ high school students (ages 13-20). Over half of the sample (55.2%) indicated CBV.

There may also be differences in CBV rates between sexual minority groups. Specifically, Robinson and Espelage (2011) found bisexual students ($n = 331$) reported significantly higher rates of CBV compared to lesbian/gay ($n = 90$), transgender ($n = 72$), or questioning ($n = 217$) students.

Effects of General, Homophobic, and Cyberbullying Victimization

Mental health, academic, and other detrimental outcomes related to GBV and HBV among LGBTQ youth have been well documented in the refereed literature. However, effects of CBV on LGBTQ youth are relatively absent. When sexual minorities are subjected to repeated acts of victimization, this has the potential of leading to serious consequences, elevating risk factors related to mental health, substance use, and school outcomes. Below, I will discuss results of some of the studies described above and additional relevant studies to demonstrate how repeated acts of GBV, HBV, and CBV can relate to detrimental outcomes for sexual minority students.

Suicide and depression. Sexual minority individuals are at an increased risk for suicide attempts and depressive symptoms. Hatzenbuehler (2011) compared suicide risk and depression between sexual minority and majority eleventh grade students ($n = 31,852$) from Oregon. LGB youth ($n = 1,413$) had higher rates of suicide attempts within the last year compared to heterosexual students ($n = 30,439$). Robinson and Espelage's (2011) study described above, also supports this finding for a smaller Midwestern sample. However, the relation between suicidal risk and GBV was not investigated in either study.

Burton and colleagues (2013) explored whether HBV had an impact on suicide and depression in their study, previously described. They found a mediating effect of HBV on both suicide and depression among sexual minorities, after controlling for age, gender, and race. On

the reverse side, with lower levels of GBV come lower reported suicide attempts and feelings of depression among LGBTQ students (Espelage et al., 2008).

Although as a whole, sexual minority individuals report higher rates of suicide attempts, ideations, and depressive symptoms due to GBV or HBV, when examining differences within the LGBTQ population, there is some indication that suicide rates vary functionally related to bullying rates within subgroups. In studies by Espelage and colleagues (2008) and Birkett and colleagues (2009), described above, LGB and heterosexual students rated depression and thoughts of suicide at similar levels, but questioning students rated depression and suicidal ideation at significantly higher rates than both LGB and heterosexual students. These results have also been found among bisexual youth. However, Robinson and Espelage (2011) found bisexual students reported significantly higher rates of suicide attempts compared to lesbian, gay, and heterosexual students. Results from these studies (Birkett et al., 2009; Espelage et al., 2008; Robinson & Espelage, 2011) suggest both bisexual and questioning students may be at a heightened risk of suicide than lesbian, gay, and heterosexual students.

Due to finding significantly higher rates of HBV and depression/suicidal feelings among questioning students, Espelage and colleagues (2008) conducted a follow-up analysis to determine whether sexual orientation and HBV moderated the effects of depression and suicide. They obtained a significant interaction effect between sexual orientation status and HBV on depression/suicide. Specifically, those who were questioning and frequently victimized also subsequently rated increased feelings of depression and suicidal ideations.

Russell and colleagues (2011), in their study described above, examined LGBTQ gender differences between HBV and suicide. They found LGBTQ males with high rates of HBV had significantly higher rates of suicidal ideation compared to LGBTQ females with high rates of

HBV. Across LGBTQ gender categories, high levels of HBV led to higher risk for suicidal attempt and depression among sexual minority individuals.

I found only one study reporting on effects of CBV across sexual orientation groups. Cooper and Blumfeld (2012) sampled 310 middle and high school students (ages 11-18) from across the United States. LGBTQ students ($n = 250$) reported higher rates of depression (56%) and suicidal thoughts (35%) due to CBV compared to the heterosexual group ($n = 60$; depression: 33%; suicidal ideation: 19%).

Substance use. Compared to heterosexual youth, LGBTQ students are at a significantly higher risk for substance abuse with or without high levels of victimization. Hatzenbuehler (2011) found significantly higher rates of binge drinking among LGB students than heterosexual students. Those who frequently drank alcohol were more likely to be at-risk for a suicide attempt. Hatzenbuehler did not find differences within the LGBTQ group on substance abuse. He also did not test whether GBV, CBV, or HBV predicted substance abuse or whether being a victim affected the frequency of substance abuse behavior. He reported significantly higher rates of physical abuse and GBV among LGB students, but it was unclear whether these factors influenced rates of substance abuse.

Espelage and colleagues, as well as Birkett and colleagues, explored the relation among three variables: sexual orientation, HBV, and alcohol/marijuana use. LGB students in Birkett and colleagues' (2009) as well as Espelage and colleagues' (2008) reported higher levels of marijuana and alcohol use than heterosexual students. The level of HBV does apparently play a role in substance use. However, questioning students with a high level of HBV also reported a higher level of both marijuana and alcohol use compared to lesbian, gay, bisexual, and heterosexual students (Birkett et al., 2009; Espelage et al., 2008). Both Birkett et al. (2009) and

Espelage et al. (2008) participants were sampled from the same Midwestern region, so more research is needed to confirm generalization of findings across LGBQ students nationwide.

Although research is pointing to high risk levels for substance abuse among LGBTQ students compared to heterosexual students, there are still few studies investigating the impact of victimization on substance use. It is therefore difficult to assume that being subjected to GBV, HBV, or CBV is related to likelihood of abusing substances. Future research should include statistical analyses that directly measure the impact of the different types of victimization on likelihood that victims will abuse alcohol or illicit drugs.

School-related problems. Few studies have investigated the effects of victimization on academic outcomes. In one study that compared the effects of HBV on truancy, Birkett and colleagues (2009) found that high rates of HBV among LGBQ students predicted a higher likelihood of truancy compared to heterosexual students with high levels of HBV. Truancy rates for LGBQ students with low levels of HBV were similar to heterosexual students' school attendance. Regarding within-LGBTQ group comparisons for the effects of HBV on truancy, questioning students with high rates of HBV were more likely to skip school than heterosexual or LGB students with high rates of HBV.

Kosciw and colleagues (2012) found among their US sample of 8,584 LGBTQ students (ages 13-20) that LGBT students with high levels of HBV were three to six times more likely to miss school compared to LGBT students with low levels of HBV. Although it is assumed that attendance will affect GPA and academic performance, Birkett and colleagues (2009) and Kosciw and colleagues (2012) did not investigate whether there was a relation between HBV rates and school performance.

Cooper and Blumenfeld (2012), detailed above, asked their participants to rate school outcome variables based on CBV. Compared with heterosexual students, LGBT students reported feeling more anxious about going to school (36%), skipped school (17%), and received lower grades in school (23%) because of experiencing CBV. Inferential statistical analyses were not conducted by the authors, so it is unclear whether significant group differences existed between heterosexual and LGBTQ students. More research, especially on group differences for CBV rates among LGBTQ and heterosexuals related to school performance variables, is merited.

Traumatic stress. Repeated acts of bullying can lead to post-traumatic stress among LGBTQ victims. Among Dragowski, Halkitis, Grossman, and D'Augelli's (2011) sample described above, levels of GBV among LGBTQ students were positively correlated with symptoms of post-traumatic stress disorder (PTSD). The more frequently participants reported experiencing acts of GBV, the more severe their PTSD symptoms were. Dragowski and colleagues measured GBV by physical (i.e., threatened with violence, objects thrown at them) and verbal means. Both types of GBV were positively correlated with post-traumatic stress among the LGBTQ participants. The authors also tested for gender differences by GBV type (verbal vs. physical). LGBTQ males who reported high levels of physical GBV had significantly higher levels of post-traumatic stress compared to LGBTQ females with high levels of physical GBV.

Rivers and Cowie (2006) reported similar findings regarding PTSD symptoms related to GBV among a sample of 119 LGB participants (mean age = 28 years) from the United Kingdom. All participants indicated they had been victims of GBV during secondary school. The authors investigated whether GBV during school correlated with PTSD symptoms during later adulthood. Seventeen percent of their sample met criteria for PTSD. Rivers and Cowie

investigated group differences by GBV type on PTSD. Their findings suggest that indirect forms of GBV (i.e., rumor spreading and not being spoken to) is more likely to lead to PTSD symptoms among LGB victims than direct forms of bullying (i.e., being called names, hit, teased, or sexually assaulted). LGB participants in their study who experienced more indirect forms of GBV had significantly more PTSD symptoms compared to those who experienced more direct forms of GBV.

Summary of Effects of Victimization

Repeated acts of GBV, HBV, and CBV can result in more reported detrimental mental health, substance abuse, and negative school outcomes for LGBTQ compared to heterosexual youth. Greater severity of GBV or HBV can lead to more severe levels of depression or suicide ideation/attempts among LGBTQ students (Birkett et al., 2009; Burton et al., 2013; Espelage et al., 2008; Hatzenbuehler, 2011; Robinson and Espelage, 2011; Russell et al., 2011). Within the LGBTQ population, questioning and bisexual students may demonstrate a greater risk for suicidal thoughts, depression, and substance abuse if they indicate experiences of HBV (Espelage et al., 2008; Birkett et al., 2009).

In the related area of PTSD, it appears PTSD poses a greater risk for LGBTQ males if subjected to physical acts of bullying, such as having objects thrown at them or if they are threatened with physical violence (Dragowski et al., 2011). Regardless of gender, PTSD may persist throughout adulthood among LGBTQ victims (Rivers & Cowie, 2006). Across all types of victimization, LGBTQ victims are at increased risk for truancy (Birkett et al., 2009; Cooper & Blumenfeld, 2012; Kosciw et al., 2012). However, more research needs to be done in exploring group differences, both between LGBTQ and heterosexual as well as within the LGBTQ group, regarding the effects of CBV on mental health and school outcomes.

Resilience and Potential Protective Factors

Across all three types of victimization (GBV, HBV, and CBV), it has been well-documented that LGBTQ youth are more susceptible to negative outcomes due to bullying. However, not all LGBTQ victims suffer the negative consequences of bullying (Scourfield, Roen, & McDermott, 2008). Those who are able to achieve positive outcomes post-bullying would be referred to as having a degree of resilience.

Resilience involves one's exposure to a perceived threat or risk, and one's ability to adapt, recover, and achieve positive outcomes across a variety of domains in spite of the risk or after the threat of the risk as subsided (Luthar, Cicchetti, & Becker, 2000). Resilience varies across individuals and is derived from three factors: 1) the individual; 2) the family; and 3) the social environment. An example of external sources of resilience might be one's relationships with supportive friends and family and a potential internal source of resilience might be one's sense of competency. Luthar, Cicchetti, and Becker (2000) report on three processes of resilience from the research literature. The first process entails an at-risk individual showing better-than-expected outcomes after being exposed to a risk factor. Another process involves the individual positively adapting to a situation in spite of it being stressful. The last process involves an individual recovering from a traumatic event. For purposes of this research study, I will be investigating the third process of resilience, an individual's recovery from trauma and whether external sources of support from the family, peers, and from the school environment help offset trauma from cyberbullying (C-trauma) and trauma from general bullying (G-trauma).

There appear to be significant differences in resilience between LGBTQ victims with high and low levels of support for outcome measures such as school membership (Birkett et al., 2009; Diaz, Kosciw, & Greytak, 2010; Espelage et al., 2008; Murdock & Bolch, 2005; Poteat et

al., 2011; Robinson & Espelage, 2011), school safety (Eisenberg & Resnick, 2006; Kosciw et al., 2012; McGuire, Anderson, Toomey, & Russell, 2010) family support (Eisenberg & Resnick, 2006; Espelage et al., 2008; Poteat et al., 2011; Williams et al., 2005) , and peer support (Eisenberg & Resnick, 2006; Mufioz-Plaza, Quinn, & Rounds, 2002; Mustanski, Newcomb, & Garafalo, 2011).

In the sections below, I will highlight key findings from the HBV, GBV, and CBV studies, most of which are detailed above, and additional studies that have explored the relation between external supportive factors and positive outcomes for LGBTQ bully-victims. Across my review of studies focusing on each protective factor, I will first compare sexual minority and majority groups on the supportive factors before comparing results within LGBTQ subgroups.

Perceptions of school membership. One source of resilience may be derived from the bully-victim's overall school climate, often operationally measured by an individual's perception of *school membership*. Researchers have defined school membership as students' perceptions of inclusion or exclusion within the school environment (Goodenow, 1993). Other scholars have defined a similar construct of *school belonging* as student perceptions about receiving respect from others within the school environment (Murdock & Bolch, 2005; Poteat et al., 2011). A third overlapping concept is that of *school connectedness*, which has been defined in the literature as how valued and accepted one feels within the school community (Diaz et al., 2010). I will discuss studies using each of these terms.

When bully-victims have a strong connection, perception of belonging, or high sense of membership within their schools, they may be able to offset the negative effects from bullying. Poteat and colleagues (2011) reported that students in their large LGBTQ sample rated their perceptions of school belongingness at significantly lower levels than the heterosexual group.

They found that across sexual orientation groups, HBV and GBV are negatively related to perceptions of school belonging. Specifically, the more GBV or HBV one experiences, the less one will feel respected by others within the school environment.

Robinson and Espelage (2011) reported similar findings across middle and high school settings. Heterosexual students in both middle and high school reported significantly higher perceptions of school belonging compared to LGBTQ middle and high school students. The authors speculated that this lower sense of school belonging among LGBTQ students may be related to teachers' homophobic attitudes regarding sexual minority students and low levels of teacher intervention after witnessing an act of homophobic bullying. Interestingly, the researchers reported a significant difference between grade levels on school belonging for LGBTQ students. LGBTQ middle school students reported a significantly lower sense of belonging in school compared to LGBTQ high school students.

Questioning students appear to have more negative perceptions of their school environment compared to LGB or heterosexual students. For example, Espelage and colleagues (2008) found in their large sample, detailed previously, that LGBTQ students held similar perceptions of the school climate as their heterosexual peers. But when parsing out questioning students from LGB participants, questioning students indicated significantly lower feelings of school belonging than LGB students. Birkett and colleagues (2009) found similar results in their study, also described above. Additionally, they indicated that having a positive perception of school climate had a moderating effect on the relation between sexual orientation and negative outcomes such as suicidal ideation, depressive symptoms, drug and alcohol usage, and truancy. Positive perceptions of school environments among questioning students appeared to buffer feelings of suicide and depression, drug and alcohol usage, and truancy behaviors. Questioning

students who perceived their schools as positive environments also had lower rates of suicide ideation, depression, drug/alcohol use, and truancy compared with questioning students with negative perceptions of their schools' climate.

Levels of victimization have been found to correlate with sense of school membership and belonging within the LGBTQ high school student population. Murdock and Bolch (2005) sampled 101 LGB students across high schools and middle schools regarding GBV, HBV, teacher support, and school membership. High levels of HBV paired with low levels of support from teachers were related to a lower sense of membership in the school. Conversely, a high amount of school membership was related to a high degree of teacher support. LGBTQ victims who perceive their teachers as supportive also felt an increased sense of school membership.

Diaz and colleagues (2010) also found a significant relation between HBV and school connectedness among a sample of 5,387 LGBT youth (mean age = 15.9) across the United States. Specifically, the more LGBTQ youth had been subjected to HBV, the lower sense of school connectedness they reported. An increased level of teacher and staff support was significantly related to greater feeling of school connectedness among LGBTQ, similar to results of Murdock and Bolch's (2005) study mentioned above.

Perceptions of school safety. Another variable related to school membership is feelings of safety within the school environment. Bully-victims who perceive their schools as unsafe may have a harder time recovering from traumatic effects due to bullying. Few studies have investigated differences between perceptions of school safety among sexual minority and majority students. Along with the lack of research in the area of perceptions of school safety between these two groups, there is also sparse research investigating the relation between perceptions of school safety and victimization.

McGuire and colleagues (2010) sampled 2,560 sixth through twelve graders from California. Significantly more transgender and questioning students ($n = 59$) reported gender identity-based harassment by both teachers and students than heterosexual students ($n = 2,201$). The transgender group also perceived significantly lower teacher intervention when they experienced HBV at school along with a significantly lesser feeling of school safety compared with heterosexual and LGB students.

Although not specifically investigating the relation between HBV and school safety, Eisenberg and Resnick (2006) investigated school safety and suicidal risks between heterosexual and LGB students. They sampled 21,927 ninth and twelfth graders from the Minnesota area. They found LGB students ($n = 2,255$) felt significantly less safe at school compared to heterosexual students ($n = 19,672$). When combined with other protective factors such as family support, school safety appeared to reduce the risk for suicide ideation and attempts across sexual orientation groups. Because these researchers did not assess victimization across any of the sexual orientation groups, it is unknown whether participants who felt unsafe at school also had been subjected to HBV, GBV, or CBV.

In a study of perceptions of school safety within an LGBTQ sample, Kosciw and colleagues reported that the majority (63.5%) felt unsafe at school because of their sexual orientation (Kosciw et al., 2012). The authors found a significant relation between feelings of school safety and school attendance. The more sexual minority students from this study felt unsafe at their schools, the more likely they were to skip class or miss an entire day of school.

Perceptions of family and peer support. Researchers have investigated the buffering effects of family and peer support on outcomes related to GBV and HBV among sexual minority high school students. Poteat and colleagues (2011) addressed the moderating influence of

parental support on HBV and GBV in their study, described above. The authors confirmed that LGBTQ adolescents in their sample reported significantly lower rates of parental support than heterosexual students. They tested whether family support moderated the effects of GBV, HBV, and suicidal thoughts and attempts across sexual orientation groups by race/ethnicity (white heterosexuals, racial/ethnic minority heterosexuals, white LGBTQ, and LGBTQ racial/ethnic minorities). Parental support buffered the effect of GBV on thoughts and attempts of suicide for all groups except the LGBTQ racial minorities. However, perceived support from parents did not offset effects of HBV on suicide risk for LGBTQ across racial/ethnic groups.

Additionally, Espelage and her colleagues (2008) also found that questioning students reported significantly less family support than their heterosexual or LGBT peers. Like Poteat and colleagues (2011), Espelage and colleagues (2008) tested whether family support would moderate the relation between HBV and negative outcomes such as substance use, depression, and suicidal ideations among LGB and questioning students. They found that parental support did not moderate the relation between depression/suicide ideation and HBV across the LGBQ groups. As for the effects of parental support on substance abuse among the sexual minority groups, there was a significant interaction effect. LGBQ students with high levels of HBV and low levels of family support also tended to report high levels of substance use compared to LGBQ students with moderate to low levels of HBV and high levels of family support.

Williams and colleagues (2005) compared perceived levels of closeness and companionship with best friends and mothers between heterosexual and LGBTQ students. They found that the LGBTQ participants reported less closeness with mothers and less companionship with best friends than heterosexual students. The researchers found a mediating relation of social support from best friends and mothers between one's sexual orientation and report of depressive

symptoms. This suggests that the quality of relationships with best friends and mothers may help reduce depression among sexual minority youth. These researchers did not examine how friend and maternal support was related to experiences of victimization.

Along with perceptions of school safety, Eisenberg and Resnick (2006) explored family connectedness in relation to suicidal behavior between LGBTQ and heterosexual participants. When both school safety and family connectedness were used as predictors of suicide, youth with low levels of family connectedness were at a much greater risk for suicide compared to those with low perceptions of school safety. Although family connectedness predicted suicide ideation and attempt across sexual orientation groups, LGBTQ students had significantly lower levels of family connectedness compared to sexual majority students. It can be inferred that having a strong connection to family members may offset the risk of suicide among the LGBTQ population, where risk for suicide has become more pronounced. However, like Williams and colleagues (2005), Eisenberg and Resnick did not include victimization as a variable in their study.

Ryan, Russell, Huebner, Diaz, and Sanchez (2010) sampled 245 LGBT young adults in the United States, aged 21 to 25. They found a positive relation between levels of family support and factors of self-esteem, general health, and social support from peers and the community. When family support was high, Ryan and colleagues reported decreases in depression, substance abuse, and suicidal ideation and attempts. Shilo and Savaya (2011) reported similar findings in a sample of 461 Israeli LGBT adolescents and young adults (ages 16-23). A high level of family support was related to low rates of emotional distress and well-being. Again, rates of victimization were not investigated in either study.

Other researchers have found peer support to be more of a protective factor than family support among LGBTQ samples. In Mufioz-Plaza and colleagues' (2002) retrospective qualitative study of 12 LGB adolescents (18-21 years-old), results revealed that these youth viewed their peers (both LGBT and heterosexual) as being more supportive than their family members. The LGB adolescents indicated that their LGB peers provided more informational and appraisal support than their family members and heterosexual peers. Informational support was defined as any form of advice provided to them, while appraisal support was when peers provided them with positive feedback or affirmations.

Friedman, Koeske, Silvestre, Korr, and Sites (2006) also conducted a retrospective study with 96 LGBTQ males from the Pittsburgh area on GBV, suicide, and perceptions of peer and parental support during elementary and high school. The authors found that parental, but not peer support, buffered effects of bullying on subsequent suicidal behaviors during both elementary and high school. Suicidality was measured as contemplating suicide, making a suicide plan, thinking about suicide, and attempting suicide.

Mustanski and colleagues (2011) sampled 425 LGBTQ (ages 16-24) from the Chicago area on HBV, psychological distress, and peer and family support. The researchers tested whether family and peer support reduced levels of distress from HBV using a hierarchical linear regression analysis. Having a strong level of family and peer support did not significantly reduce emotional distress from HBV.

Models of Resilience

In spite of research findings that predict negative psychological effects for sexual minority students, not all LGBTQ individuals experience negative outcomes as a result of stigmatization and victimization. Sexual minority youth with healthy coping skills and

supportive groups, whether through LGBTQ community organizations, parents, or friends, may be better equipped to reduce adverse effects of prejudice and discrimination. Using Fergus and Zimmerman's (2005) models of resilience (e.g., compensatory, protective, and challenge), I will explore some potential models of resilience that may reduce the effects of C-trauma and G-trauma.

Fergus and Zimmerman (2005) agree with Luthar, Cicchetti, and Becker's (2000) notion of resilience in that it is not a personality attribute, but more of a process an individual goes through when exposed to a risk factor. Therefore, the term "resilience" is used over "resilient," which implies that resiliency is a character trait that some youth may possess, but not others. Fergus and Zimmerman argue that all individuals can achieve a level of resilience. Therefore, I will refer to resilience as the process of overcoming risk exposure. Fergus and Zimmerman (2005) state that resilience requires risk exposure and promotive factors that offset the risk. Promotive or supportive factors are composed of individual strengths and external resources. The three main models they propose (e.g., compensatory, protective factor, and challenge) incorporate risk and promotive factors and how these factors lead to negative or positive outcomes. I will use examples related to bullying when describing each model to better illustrate how these models relate to my topic of victimization among sexual minority and majority students.

The compensatory model involves the direct effects of both protective and risk factors on an outcome. The promotive factor in this model is independent of the risk factor. LGBTQ students who experience bullying (risk factor) may be more likely to skip school (outcome). But if they attend a school that strictly enforces anti-bullying policies (resource), then this may directly improve LGBTQ bully-victims' school attendance. Fergus and Zimmerman (2005)

suggest using a multiple regression or structural equation model when using the compensatory model to investigate direct effects of promotive factors on outcomes.

The protective factor model investigates the moderating effects of assets and/or resources on reducing risk associated with an outcome. For example, LGBTQ students who experience GBV at school (risk factor) may report symptoms of PTSD post-bullying. However, if they have high levels of peer and family support, then this may offset some of the G-trauma. If using the protective model, a multiple regression or group comparison using a structural equation model is preferred (Fergus & Zimmerman, 2005).

The challenge model delineates a curvilinear relation between a risk and an outcome in that both high and low levels of risk are related to negative outcomes. This model proposes that exposure to a moderate level of risk is related to a smaller degree of negative outcomes. The amount of exposure to risk becomes the most important aspect of the challenge model. When exposed to a moderate level of risk, the model suggests that adolescents can learn how to successfully cope when they encounter risk in order to achieve a level of resilience. For example, LGBTQ youth who are exposed to a low frequency of bullying may be able to better cope with future acts of bullying, but exposure to high amounts of bullying may not lead to a higher level of coping skills when bullying occurs in a repeated fashion. On the other hand, a moderate level of bullying allows LGBTQ youth to try and resolve the conflict with the bully in order to prevent future acts of bullying.

Although all three models (compensatory, protective, and challenge) may provide adequate explanations for resilience from bullying, I am basing my exploration of resilience from victimization on the protective factor model. The compensatory model explores relations of both risk factors and protective factors on outcomes, but it fails to investigate whether protective

factors can reduce negative outcomes due to risk exposure. The challenge model investigates levels of risk exposure and an individual's ability to cope when faced with future exposure to risk, but does not explore protective factors at all. Because I am interested in exploring how potential external sources of support (protective factors) can reduce G-trauma and C-trauma (negative outcome) due to GBV or CBV (risk exposure), I used the protective factor model of resilience to guide my research.

Summary of Purpose

Past research has demonstrated significant differences between sexual minority and majority students on a range of victimization experiences, with LGBTQ groups typically undergoing higher rates of GBV and HBV (Buck et al., 2013; Espelage et al., 2008; Robinson & Espelage, 2011). Although not studied as extensively as GBV and HBV, CBV may also provide a greater threat to LGBTQ students than sexual majority students (Kosciw et al., 2012; Robinson & Espelage, 2011). Studies indicate that LGBTQ youth are at a heightened risk for suicide, depression, substance use, and truancy compared to their non-LGBTQ peers (Birkett et al., 2009; Burton et al., 2013; Kosciw et al., 2012). Among these risk factors, suicidal risk and depression have been researched extensively (Birkett et al., 2009; Burton et al., 2013; Cooper & Blumenfeld, 2012; Espelage et al., 2008; Hatzenbuehler, 2011; Robinson & Espelage, 2011; Russell et al., 2011). However, few studies have explored post-traumatic distress related to bullying (D'Augelli et al., 2002; Dragowski et al., 2011).

Findings from my literature review of potential external sources of resilience have suggested that there is a difference between LGBTQ and heterosexual students on perceived level of support from peers and from family as well as feelings of membership and safety within the high school environment (Birkett et al., 2009; Eisenberg & Resnick, 2006; Espelage et al.,

2008; Kosciw et al., 2012; Poteat et al., 2011). Using Fergus and Zimmerman's (2005) protective factor model of resilience (see Figure 1), I used two multiple regressions with moderation to test whether peer and family support, school membership and safety reduced G-trauma and C-trauma among LGBTQ and non-LGBTQ students. Results from my study will better inform high schools regarding the potential benefits of ensuring LGBTQ students feel supported and safe within their school environment.

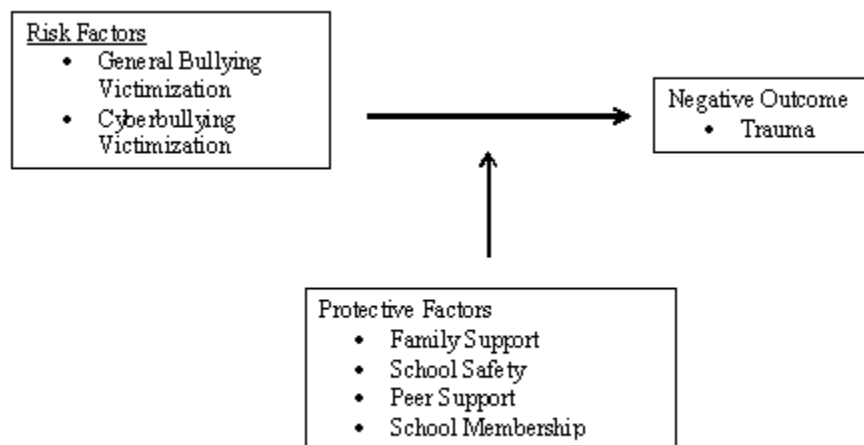


Figure 1. Protective Factor Model of Resilience among LGBTQ and non-LGBTQ students

Variables in the Current Study

In this study, I examined these variables: GBV, CBV, and HBV, adapted from Smith and colleagues (2008) and Robinson and Espelage (2011), family and peer support (*Perceived Social Support from Friends and from Family Scale*; Procidano & Heller, 1983), school membership (*Psychological Sense of School Membership Scale*; Goodenow, 1993), and school safety (*Personal Safety Scale*; Skiba, Simmons, Peterson, & Forde, 2006), and trauma, as measured by the *Impact of Event Scale* (Horowitz, Wilner, & Alvarez, 1979).

Research Questions and Hypotheses

Upon reviewing the research on the three types of victimization, rates of trauma, and perceptions of support between LGBTQ and heterosexual participants, I developed the following research questions and hypotheses to guide my study:

1. Is there a significant difference between LGBTQ and non-LGBTQ participants on rates of GBV, HBV, and CBV?

H₁: LGBTQ participants are predicted to have significantly higher rates of GBV, HBV, and CBV compared to heterosexual participants.

2. Is there a significant difference between LGBTQ and non-LGBTQ participants on levels of G-trauma and C-trauma?

H₁: LGBTQ participants are hypothesized to have significantly higher rates of G-trauma than heterosexual participants.

H₂: LGBTQ participants are predicted to have significantly higher rates of C-trauma than heterosexual participants.

3. Is there a significant difference between LGBTQ and non-LGBTQ participants on perceptions of family support, peer support, school membership, and school safety?

H₁: LGBTQ participants are predicted to have significantly lower perceptions of family support, peer support, school membership, and school safety than non-LGBTQ participants.

4. Among LGBTQ participants, do external sources of support moderate the relation between GBV and G-trauma?

H₁: Family support, peer support, school membership, and school safety will moderate the relation between GBV and G-trauma among LGBTQ participants.

5. Among LGBTQ participants, do external sources of support moderate the relation between CBV and C-trauma?

H₁: Family support, peer support, school membership, and school safety will moderate the relation between CBV and C-trauma among LGBTQ participants.

6. Among heterosexual participants, do external sources of support moderate the relation between GBV and G-trauma?

H₁: Family support, peer support, school membership, and school safety will moderate the relation between GBV and G-trauma among heterosexual participants.

7. Among heterosexual participants, do external sources of support moderate the relation between CBV and C-trauma?

H₁: Family support, peer support, school membership, and school safety will moderate the relation between CBV and C-trauma among heterosexual participants.

CHAPTER III:

MATERIALS AND METHODS

Participants

Upon approval from the Institutional Review Board, participants were first recruited from two sites within a Southeastern publically funded university: an undergraduate introductory psychology course ($n = 123$) and a special education course ($n = 63$). The first recruitment site came from the University's Psychology Department's Sona Systems website. Students enrolled in psychology courses log into the Sona Systems website and voluntarily select which studies they would like to complete for research credit in their psychology courses. Students are provided with titles and brief descriptions of studies. Students must be 18 years or older in order to participate in studies featured on the Sona Systems site. I contacted an associate professor, who coordinates the psychology department's Sona Systems website, for permission to post my study description and link to the survey on Sona Systems. The study description is listed in Appendix A.

Additionally, I recruited undergraduate students from an upper level Special Education course ($n = 63$). Students in this course had been admitted to the university's teacher education program. The course covers strategies and resources for teachers to meet the needs of diverse learners, such as students with disabilities or who come from a range of sociocultural backgrounds. I arranged with the special education instructors to recruit participants at the beginning of their class sessions. Instructors had agreed to offer students extra credit as an incentive to participate. I then e-mailed a link to the online questionnaire to those students who expressed an interest in participating (see Appendix B for e-mail to teacher education students). Students wrote in their names in a box provided on the survey. I then sent a list of participant

names to instructors near the end of the semester so participants would receive credit. When the data were downloaded, I deleted names of participants for confidentiality purposes.

Because the number of LGBTQ participants was expected to be low, I sought out college level LGBTQ student groups via the website campuspride.org. This website provides a list of LGBTQ centers and undergraduate organizations across the United States, including the undergraduate group at the University of Tennessee. I contacted either the president or faculty advisor of each organization and sent them information about my study (see Appendix C for recruitment e-mail). If organizations were interested in participating, I instructed them to e-mail me with “Our organization agrees to participate in the study” (see Appendix D for participation agreement e-mail). I then e-mailed this agreement to the University of Tennessee’s Compliance Officer in the Office of Research. Once organizations agreed to participate, I e-mailed them a link to the study. See Table 1 for list of LGBTQ participants by college or university. Forty LGBTQ undergraduate students outside of the University of Tennessee completed the online questionnaire. Please note that participants from the LGBTQ group vary widely in geographic origin.

Table 1. LGBTQ Participants by University (N = 55)

University/College	<i>n</i>	Frequency (% Total)
Eastern Washington University	1	1.8
Emory University	3	5.5
Georgia College & State University	1	1.8
Gonzaga University	5	9.1
Goucher College	5	9.1
Indiana/Purdue University-Ft. Wayne	2	3.6
Macalester College	2	3.6
Miami University at Ohio	7	12.7
Spokane Falls Community College	1	1.8
State University of New York-Fredonia	3	5.5
Weber State University	2	3.6
University of California-Los Angeles	1	1.8
University of Maryland-Baltimore County	4	7.3
University of North Florida	1	1.8
University of Tennessee-Knoxville	15	27.3
University of Wisconsin-Platteville	2	3.6

The final sample consisted of 55 (24.3%) LGBTQ and 171 (75.7%) heterosexual undergraduate students. Of the total sample, 129 (57.1%) were female and 45.6 % ($n = 103$) were classified as first-year college students. Ages of participants ranged between 18 and 53 years ($M = 20.55$; $SD = 4.23$). Within the LGBTQ sample, 23 identified as gay (10.6%), 18 as bisexual (8.0%), 11 as lesbian (5.3%), and 3 as questioning (1.3%). Among the transgender participants (2.2%; $n = 5$), one identified as gay, one as lesbian, two as bisexual, and one as questioning. Four undergraduate students indicated being homeschooled during their last year of high school and were excluded from analyses that included the school safety and school membership variables (i.e., Research Questions 3-7). One homeschooled participant identified as LGBTQ and three as heterosexual. Demographics for the final sample are displayed in Appendix E.

Variables and Measures

All scales included in the questionnaire came from those deemed to be reliable and valid methods to measure the intended constructs as detailed in the research literature and used in past research. Descriptive information regarding sexual orientation status, age, class status, ethnicity, and gender were obtained from a brief demographics questionnaire presented at the beginning of the survey (see Appendix F). Dependent and moderator variables were derived from mean composite scores from the scales detailed in the following section.

Bullying and cyberbullying scales (GBS & CBS). GBV and CBV were measured using adapted items from the GBS and CBS (Smith et al., 2008). The original 8-item scale measures victimization due to bullying and/or cyberbullying in or near school during one's lifetime. The GBS and CBS also included "yes/no" responses. Smith and colleagues (2008) adapted items from Olweus' Bully/Victim questionnaire. Although Smith and colleagues did not report psychometrics for their adapted scale, Solberg and Olweus (2003) have reported strong construct and discriminant validity of Olweus' Bully/Victim questionnaire. Because of the retrospective nature of the study, I asked participants to answer items related to victimization based on their last year in high school. I also modified the items related to the GBV and CBV experiences from dichotomous to continuous responses using a 5 point Likert-type scale (*never* to *very often*). Continuous scales allow a wider range of outcome scores for more powerful statistical analyses to address my research questions. I also included three items from Robinson and Espelage (2011) that asked about the frequency of bullying due to being perceived as LGBTQ, bullying due to race/ethnicity and bullying due to physical appearance. Robinson and Espelage (2011) report a high reliability for their four item victimization measure ($\alpha = .72$), but do not report any psychometric data concerning the validity of their bullying/cyberbullying scale. I added another

item addressing frequency of bullying due to having a disability for a total of 12 items per GBS and CBS. I obtained a Cronbach's alpha of .91 for the GBS and .68 for the CBS. See Appendix G for the GBS and Appendix H for the CBS items.

Before participants answered questions related to GBV or CBV, they read a definition of each type of bullying. After reading the definition, participants then indicated whether or not they experienced GBV or CBV. If participants indicated "yes" to being bullied or cyberbullied, they went on to answer questions about GBV or CBV experienced during their last year of high school. I calculated a GBS scale score by adding the 12 items and dividing by the total number of items in order to calculate the mean composite. I calculated the mean composite for the CBS scale scores the same way as I computed the GBS scale score mean composites.

Homophobic bullying scale (HBS). HBV was measured using an item adapted from Robinson and Espelage (2011). Again, the authors did not report on validity of items used in their victimization scale. After participants completed items related to GBV and CBV, they were asked if they had been bullied/cyberbullied during their last year of high school "because of being perceived as gay, lesbian, transgender, or bisexual". The HBS included two items that were included within the GBS and CBS. Responses were on a 5 point Likert-scale (*never to very often*). HBV scale scores were calculated by adding together the two items and dividing by two in order to calculate the mean composite score. Because the HBV items were contained within the GBS and CBS, participants did not complete the IES in relation to experiencing HBV. An overall Cronbach's alpha of .85 was calculated for the HBS. Appendix I details the items included in the HBS.

Impact of events scale (IES). Participants completed the IES (Horowitz, Wilner, & Alvarez, 1979) following each of the victimization measures. This 15 Likert-type item scale

measures one's personal distress following a stressful life event. The scale includes two subscales of intrusion and avoidance responses to traumatic events. The intrusion subscale includes items related to uncontrollable thoughts and feelings related to the event as well as troubled sleep, while the avoidance subscale includes items related to emotional numbness, thought blocking, and denial of the event as being impactful. This scale was administered after both the GBS and CBS. Participants who completed items from either the GBS and/or CBS completed the IES related to that victimization experience. Two trauma composite scores were calculated: 1) G-trauma and 2) C-trauma. I did not calculate subscale scores for intrusion or avoidance related to the type of victimization experience. Each composite score was calculated by adding together the 15 items and dividing by the number of items to determine the mean. The authors reported a high total split half reliability ($r = .86$), while I found a Cronbach's alpha of .97 for G-trauma and .97 for C-trauma. The authors also reported initial evidence of discriminant and construct validity of the IES (Horowitz et al., 1979) and follow-up studies revealed content validity between the sub-scales of intrusion and avoidance (Sundin & Horowitz, 2002), construct validity (McFarlane, 1988), and convergent validity between the IES and other scales that measure PTSD (Sundin & Horowitz, 2002). Appendix J includes the items in the IES.

Perceived social support from friends (PSS-Fr) and from family (PSS-Fa). PSS-Fa and PSS-Fr (Procidano & Heller, 1983) assesses the degree of perceived support, information, and feedback both from family and friends. The scale contained two sections: one measured how adequate participants perceived support from friends (PSS-Fr) and the other assessed how much support they felt they were receiving from family (PSS-Fa). Each scale (e.g., PSS-Fa and PSS-Fr) contained 20 Likert-type scale items (*never* to *always*). Participants reflected on feelings and experiences with friends and family during their last year of high school. I derived two separate

composite scores: one for perceptions regarding relationships with friends and another for perceptions about relationships with family. Procidano and Heller (1983) reported strong reliability for both the PSS-Fr and PSS-Fa with a Cronbach's alpha of .88 and .90, respectively. The authors also reported strong construct validity in that the PSS-Fa and PSS-Fr were negatively related to measures of distress and psychopathology. I calculated a Cronbach's alpha of .94 for PSS-Fr and .95 for PSS-Fa. I added the items from PSS-Fa and PSS-Fr, respectively, and divided each by 20 to calculate two mean composite scores. Refer to Appendix K for items included in PSS-Fa and PSS-Fr.

Perceptions of school membership scale (PSSM). To measure the construct of school membership, I used the PSSM scale (Goodenow, 1993), which measures how connected participants felt within their school environment. It also assesses participant beliefs about individual capabilities, accessibility of school resources, and relationships with others within the school. The total scale consisted of 18 Likert-type scale items from 1 (*never*) to 5 (*always*), which asked participants to reflect back onto their last year of high school before completing each item. Reliability of the scale ranged from .77 to .88 across middle and high school students from urban and suburban areas in the Northeast. Goodenow (1993) reported construct validity for the instrument. She compared scores on PSSM with teacher ratings of social standing with peers. Students with high, medium, and low social standing ratings had significantly different PSSM scores. The total reliability of PSSM among the participants in this study was .95. To calculate a mean composite of school membership, I added the 18 items and divided by the total number of items. Appendix L includes all the PSSM items.

Perceptions of school safety scale (PSS). I used a subscale of the Safe and Responsive Schools (SRS) Safe Schools Survey in order to assess participants' perceptions of school safety

(Skiba et al., 2006). The SRS Safe Schools Survey consists of four scales: connection/climate, incivility and disruption, personal safety, and delinquency/major safety. The Personal Safety Scale (PSS) was administered and the other three scales (i.e., connection/climate, incivility and disruption, and delinquency) were not. Perceptions of school safety were measured using the PSS, which is made up of 8 items on a five point Likert-type scale (*never to very often*). The scale measured feelings of personal safety within a variety of settings in high school along with one's sense of overall safety within the school environment. The test developers sampled a variety of schools (elementary, middle, and high school) from the Midwest and found a reliability coefficient of .89 for the total scale (Skiba et al., 2006), while I found reliability to be .93 for the total sample. The authors did not report psychometric data regarding validity of the scale. I calculated a mean composite score for PSS by adding together the 8 items and dividing by the total number of items. See Appendix M for items included in the PSS.

Procedures

The questionnaire was created using the SPSS Data Collection Web Interviews, a software program that creates web surveys and allows for survey responses to be downloaded directly into SPSS for data analysis. Before participants could go on to complete the questionnaire posted on SPSS Data Collection Web Interviews, they had to indicate their age. If participants reported they were less than 18 years-old, they were automatically brought to the end of the survey and did not go on to complete any of the scales. If participants reported being 18 years or older, they went on to complete the consent form and questionnaire. There were three consent forms: one for the LGBTQ participants outside of the University of Tennessee (see Appendix N), one for the undergraduate University of Tennessee psychology students (see Appendix O), and one for the University of Tennessee teacher education students (see Appendix

P). Because a participant could be enrolled in a psychology course and a special education course, I included directions at the end of the consent form informing participants to complete the questionnaire once. All participants were informed that they must be 18 years or older in order to participate. They were also informed that all survey items would ask them to reflect back onto their last year of high school. Participants had the option of skipping answers by clicking on the “no response” column for each item in the questionnaire. After participants viewed the informed consent form, they went on to complete a demographics questionnaire (see Appendix F). Participants reported their gender, sexual orientation, class status, and ethnicity.

Participants then read a definition of CBV and indicated whether or not they had experienced CBV. Those who indicated “yes” completed the CBS, then the IES, which asked them to indicate how frequently they felt traumatic symptoms due to being cyberbullied during their last year of high school. Those who had not been cyberbullied during their last year of high school did not complete items in the CBS or IES. Participants then read a definition of GBV before indicating whether or not this occurred during their last year in high school. Similar to before, participants who indicated “yes” to being bullied completed the GBS and then the IES related to that form of bullying. HBV items were included at the end of each the GBS and CBS.

Participants who indicated not being bullied their last year of high school did not complete either the GBS or the IES and went on to complete the supportive factor scales in the following order: PSS-Fr, PSS-Fa, PSSM, and PSS. A screening item was included for participants who had been homeschooled, and it appeared prior to the PSSM and PSS scales. Since homeschooled participants could not adequately reflect on feelings of school safety and membership since they did not attend a traditional high school, then they only completed PSS-Fr and PSS-Fa. Contact information for the University of Tennessee’s counseling center was also

provided in case answering the questions caused emotional distress. For participants external to the University of Tennessee, I encouraged them to contact their college or university's counseling center for follow-up, if needed.

CHAPTER IV:

RESULTS

Preliminary Analysis

Data cleaning procedures. SPSS Version 20.0 was used to conduct frequency analyses on all the dependent variables prior to running analyses for Research Questions 1 through 7. All dependent variables were visually inspected via histograms for skewness and kurtosis to ensure they were normally distributed. Dependent variables were deemed to have a normal distribution if skewness or kurtosis values were less than 2 (Tabachnick & Fidell, 2007). Additionally, if dependent variables did not approximate a normal distribution, then I checked for outliers across dependent variables by converting variables into z-scores. I then conducted a frequency analysis on the z-scores. If z-scores were greater than 3 standard deviations from the mean score of the distribution, then these scores were deemed as outliers (Tabachnick & Fidell, 2007). I then transformed outlying scores by replacing the outlier with a value that was 3 standard deviations from the mean score of the dependent variable. I then conducted more frequency analyses and visually inspected histograms to see if the transformed outliers improved normality of the dependent variables.

Descriptive statistics of research variables. See Table 2 for descriptive statistics of the mean composite scores of each of the variables used prior to data cleaning. GBV, CBV, HBV, G-trauma, and C-trauma variables all had either a skewness and/or kurtosis statistic of greater than 2 which indicated these variables did not represent a normal distribution. I followed procedures described in “Data Cleaning Procedures” to adjust for outlying scores.

The mean composites of GBV, CBV, HBV, G-trauma, and C-trauma all contained outlying scores (i.e., greater than 3). The percentage of outlying scores for GBV, CBV, HBV,

G-trauma and C-trauma were 1.8% ($n = 4$), 2.2% ($n = 5$), 4.0% ($n = 9$), 2.2% ($n = 5$), and 3.1% ($n = 7$) respectively, for a total of 30 outlying values across mean composites. Three outliers were between 5 and 6 standard deviations, ten were between 4 and 5 standard deviations, and seventeen were between 3 and 4 standard deviations from the mean composite score. I transformed the outliers as described in the data cleaning procedures by replacing the outlying value with a value that was 3 standard deviations from the mean.

I then conducted another frequency analysis on the victimization and trauma variables in order to check for improved normality of distributions. GBV (Kurtosis = 1.77; Skewness = 1.67) and G-trauma (Kurtosis = 1.05; Skewness = 1.59) were the only variables that represented normal distributions after outliers were modified. Descriptive analyses of CBV (Kurtosis = 6.01; Skewness = 2.69), HBV (Kurtosis = 5.95; Skewness = 2.70), and C-trauma (Kurtosis = 5.76; Skewness = 2.70) still revealed non-normal distributions after outliers were transformed. Refer to Table 3 for descriptive statistics of variables after data-cleaning procedures. All the protective factor variables (i.e., school membership, school safety, peer support, and family support) were normally distributed and were not checked for outlying scores.

Table 2. Descriptive Statistics of Variables before Data-Cleaning

Variable	Mean	SD	Skewness	Kurtosis	N
Bullying Victimization					
General	1.33	.58	1.77	2.35*	226
Cyber	1.10	.30	3.41*	12.46*	226
Homophobic	1.18	.53	3.11*	9.42*	226
Protective Factors					
Family Support	3.62	.89	-.73	-.38	226
Friend Support	3.77	.73	-.42	-.40	226
School Membership	3.82	.79	-.64	.02	222
School Safety	4.52	.65	-1.41	1.73	222
Trauma					
General Bullying	1.45	.82	1.60	2.35*	226
Cyberbullying	1.20	.58	3.13*	9.46*	226

*Values greater than /2/ indicate non-normal distributions.

Table 3. Descriptive Statistics of Variables after Data-Cleaning

Variable	Mean	SD	Skewness	Kurtosis	N
Bullying Victimization					
General	1.33	.57	1.67	1.77	226
Cyber	1.09	.25	2.69*	6.01*	226
Homophobic	1.17	.45	2.70*	5.95*	226
Trauma					
General Bullying	1.46	.83	1.59	1.05	226
Cyberbullying	1.19	.53	2.70*	5.76*	226

*Values greater than /2/ indicate non-normal distributions.

Results of Research Question Analyses

Research question 1: Is there a significant difference between LGBTQ and non-LGBTQ participants on rates of GBV, HBV, and CBV?

Overall, 31.4% ($n = 71$) of participants indicated being victims of general bullying. Of the LGBTQ participants, 52.7% ($n = 29$) reported being GBV victims, while forty-two (24.6%) heterosexual participants reported being victims of GBV. Across study participants, 13.7% ($n = 31$) reported being cyberbullied during their last year of high school. Eighteen heterosexual participants (10.5%) and thirteen LGBTQ participants (23.6%) experienced CBV. Twenty-eight participants (12.5%) rated they had been bullied because of being perceived as LGBT and 4.9% ($n = 11$) reported they had been cyberbullied because of being perceived as LGBT. Within the LGBTQ group, 82.7% ($n = 24$) reported being bullied and 24.1% ($n = 7$) reported being cyberbullied because of their sexual orientation. Among heterosexual victims, 9.5% ($n = 4$) reported being bullied and 11.1% ($n = 2$) reported being cyberbullied because of being perceived as LGBT.

Originally, a MANOVA was planned to test for overall group differences between LGBTQ and non-LGBTQ college students on rates of GBV, HBV, and CBV. Dependent variables with moderate correlations ($r < .60$) indicate that the dependent variables are measuring separate constructs, which is ideal when conducting MANOVA (Tabachnick & Fidell, 2007). However, correlations between the dependent variables of HBV and GBV ($r = .62$) indicated a high level of multicollinearity (see Appendix Q). Therefore, MANOVA could not be used to test for group differences on rates of victimization since CBV was the only variable with low to moderate correlations with GBV ($r = .32$) and HBV ($r = .34$). I therefore planned to perform independent t-tests to answer Research Question 1.

Independent-t tests are considered robust statistical tests, and thus, violations of normality and homogeneity of variance (i.e., results of Levene's test) can have little effect on the overall t test (Sawilowsky & Blair, 1992), as long as the size of each sample is equal to or greater than 30 (Pagano, 2004), and the variance of one group is no more than 4 or 5 times larger than the variance of the other group (Tabachnick & Fidell, 2007). To ensure there were no extreme violations of homogeneity of variance, I obtained a variance ratio ($F_{\max}$) for each dependent variable (i.e., CBV, GBV, and HBV), by dividing the lowest group variance by the highest group variance. If the $F_{\max}$ test was less than 4, then the homogeneity of variance assumption was not violated and an independent t-test could be conducted instead of the non-parametric equivalent (Tabachnick & Fidell, 2007). The mean composite scores of GBV, HBV, and CBV, as determined from the GBS and CBS, were used to assess the frequency of victimization experiences (i.e., how often victimization occurred during one's last year of high school) and were included as the dependent variables used in the analyses.

The $F_{\max}$ ratio was less than 4 for GBV and CBV and thus, independent t-tests were chosen over Mann-Whitney U tests. As hypothesized, LGBTQ participants ($M = 1.68$, $SD = .76$) reported significantly higher rates of GBV compared to heterosexual participants ($M = 1.22$, $SD = .45$), $t(224) = -5.50$, $p < .001$. LGBTQ participants ($M = 1.16$, $SD = .31$) reported significantly higher rates of CBV compared to heterosexual participants ($M = 1.07$, $SD = .22$), $t(224) = -2.28$, $p < .05$. There was a medium effect size for GBV ($d = .74$) and a small effect size for CBV ($d = .33$) between the sexual orientation groups (Cohen, 1988).

However, for HBV, the $F_{\max}$ ratio equaled 16.16, which suggested the two sexual orientation groups varied to an extreme degree. Therefore, a Mann-Whitney U test was performed with HBV as the dependent variable and the sexual orientation status included as the

independent variable. As predicted, the results of a Mann-Whitney test also revealed significantly higher rates of HBV among LGBTQ participants (Mean Rank = 153.64) than heterosexual participants (Mean Rank = 100.59), $U = 2495$, $p < .001$. There was a large effect size for HBV ($r = .58$) between the sexual orientation groups (Field, 2013).

Post-hoc analyses. In addition to investigating group differences of victimization, I also examined the levels of types of victimization experiences within the items of the GBS, CBS, and HBS. To determine whether the two sexual orientation groups differed on frequency of types of victimization experiences, independent t-tests with sexual orientation status as the independent variable and the mean scores for the GBS, CBS, and HBS items were used as the outcome measures. Before conducting these analyses, I excluded participants who indicated not being a victim of GBV, HBV, or CBV (see Appendix G and H for screening items). Sexual orientation status was used as the independent variable and the GBS, HBS, and CBS items (see Appendix G-I) were used as the dependent variables in the independent t-test.

General bullying victimization. Appendix R displays the frequency and type of GBV for LGBTQ and heterosexual participants as well as across the total sample. Table 4 displays results of the independent t-test on GBV experiences between the sexual orientation groups. Significantly more LGBTQ victims had higher mean scores on items reporting name calling ($M = 3.28$, $SD = 1.28$; $t(69) = -2.03$, $p < .05$) and teasing ($M = 3.34$, $SD = 1.11$; $t(69) = -2.36$, $p < .05$) than heterosexual victims (called names; $M = 2.67$, $SD = 1.22$; teased; $M = 2.67$, $SD = 1.24$). Heterosexual and LGBTQ participants reported similar levels of mean scores on GBV experiences across the remaining GBS items.

Table 4. Results of Independent t-test between Sexual Orientation and GBV Experience

GBV Experience	<u>LGBTQ</u>		<u>Heterosexual</u>		<i>df</i>	<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Punched/Kicked	1.14	.35	1.24	.53	69	.89
Damaged Belongings	1.59	.87	1.60	.73	69	.05
Called Names	3.28	1.28	2.67	1.22	69	-2.03*
Teased	3.34	1.11	2.67	1.24	69	-2.36*
Threatened	1.59	.82	1.50	.89	69	-.41
Rumors Spread	3.24	1.33	2.88	1.13	69	-1.23
Excluded/Left Out	3.48	1.33	2.88	1.13	69	-1.87
About Race	1.52	1.35	1.14	.47	69	-1.66
About Religion	1.41	.68	1.45	.86	69	.20
About Appearance	2.62	1.18	2.31	1.14	69	-1.12
About Disability	1.55	1.48	1.17	.62	69	-1.51

* $p < .05$

Homophobic bullying victimization. Results for the independent t-test are displayed in Table 5. LGBTQ victims obtained higher mean ratings of GBV ($M = 2.45$, $SD = .83$; $t(69) = -2.87$, $p < .01$) and CBV ($M = 3.23$, $SD = .83$; $t(29) = 4.37$, $p < .001$) because of being perceived as LGBTQ compared to heterosexual HBV victims (GBV: $M = 2.05$, $SD = .31$; CBV: $M = 2.11$, $SD = .47$). Appendix R displays the frequency and type of HBV between the two sexual orientation groups as well as across the entire sample.

Table 5. Results of Independent t-test between Sexual Orientation and HBV Experience

HBV Experience	<u>LGBTQ</u>		<u>Heterosexual</u>		<i>df</i>	<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
GBV due to LGBTQ	2.45	.83	2.05	.31	69	-2.87**
CBV due to LGBTQ	3.23	.83	2.11	.47	29	4.37***

*** $p < .01$, ** $p < .001$

Cyberbullying victimization. Heterosexual and LGBTQ participants reported similar mean scores on type of CBV with the exception of one CBV experience. Significantly more heterosexual participants reported higher mean scores on the CBV item of receiving prank or silent phone calls ($M = 2.50$, $SD = 1.20$) than LGBTQ participants ($M = 1.54$, $SD = .78$), $t(29) = 2.53$, $p < .05$. See Table 6 for results of the independent t-test between sexual orientation groups on types of CBV experiences. See Appendix R for the frequency and type of CBV among the sexual orientation groups.

Table 6. Results of Independent t-test between Sexual Orientation and CBV Experience

CBV Experience	<u>LGBTQ</u>		<u>Heterosexual</u>		<i>df</i>	<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Nasty texts	1.92	1.19	2.50	.99	29	1.48
‘Happy slapping’	1.46	.78	2.00	1.33	29	1.31
Prank/Silent Calls	1.54	.78	2.50	1.20	29	2.53*
Rude E-mails	1.23	.60	1.22	.43	29	-.05
Insults on website	3.23	.83	2.78	1.11	29	-1.24
Harassed in chatroom	1.38	.77	1.00	.00	29	-2.14
Insults on IM	1.38	.65	1.28	.67	29	-.44
About Race	2.15	.55	2.00	.00	29	-1.19
About Religion	2.46	.78	2.50	1.15	29	.10
About Appearance	3.77	1.17	3.17	.92	29	-1.61
About Disability	1.92	.28	2.17	.79	29	1.07

* $p < .05$

Research question 2: Is there a significant difference between LGBTQ and non-LGBTQ participants on levels of G-trauma and C-trauma?

To address research question 2, independent t-tests were performed to examine whether significant differences existed between the sexual majority and minority college students

(independent variables) on levels of G-trauma and C-trauma (dependent variable). G-trauma and C-trauma were measured using the mean composite score from each IES scale; the one that appeared after the GBS and the one that appeared after the CBS. The $F_{\max}$ ratios of both of the trauma variables were less than 4. Therefore, independent t-tests were used to test for statistical differences between LGBTQ and non-LGBTQ undergraduates on G-trauma and C-trauma.

Results of the first independent t-test where sexual orientation was the independent variable and C-trauma was the dependent variable supported the research hypothesis. LGBTQ undergraduate students reported significantly higher levels of C-trauma ($M = 1.46$, $SD = .91$) than heterosexual undergraduate students ($M = 1.11$, $SD = .38$), $t(224) = -2.28$, $p < .05$. As for G-trauma, again, results supported the research hypothesis. LGBTQ participants reported significantly higher rates of G-trauma ($M = 1.88$, $SD = .98$) compared to heterosexual participants ($M = 1.32$, $SD = .71$), $t(224) = -4.52$, $p < .001$. There was a medium effect size for C-trauma ($d = .50$) and G-trauma ($d = .65$) between the sexual orientation groups (Cohen, 1988).

Research question 3: Is there a significant difference between LGBTQ and non-LGBTQ participants on perceptions of family support, peer support, school membership, and school safety?

In order to test for group differences between the sexual orientation groups (independent variables) on the protective factors (dependent variables), a MANOVA was performed. A Pearson product moment analysis was conducted on the mean composite scores of family support, peer support, school membership, and school safety. All of the protective factors were moderately correlated with each other ($r < .60$), with the exception of peer support and school membership ($r = .62$) and school safety and school membership ($r = .61$). Since school membership was highly correlated with two of the protective factors (i.e., peer support and

school safety), school membership was excluded from the overall MANOVA. See Appendix Q for correlations between the protective factors.

The results of the overall MANOVA indicated a significant mean difference between LGBTQ and non-LGBTQ college students among the three factors of school safety, peer support, and family support, $F(3, 218) = 18.25, p < .001, \lambda = .799, \text{partial } \eta^2 = .20, \text{power} = 1.00$. As hypothesized, LGBTQ participants reported significantly lower perceptions of school safety ($M = 4.28, SD = .80$), peer support ($M = 3.54, SD = .79$), and family support ($M = 2.93, SD = .89$) compared to heterosexual participants (school safety: $M = 4.59, SD = .57$; peer support: $M = 3.84, SD = .70$; family support: $M = 3.85, SD = .77$). Effect sizes for school safety, peer support, and family support were .45, .40, and 1.11, respectively, as determined by Cohen's d . There was a small effect size for school safety and peer support and a large effect size for family support between the two sexual orientation groups (Cohen, 1988). See Table 7 for results of overall MANOVA and follow-up one-way ANOVAs on the protective factors of school safety, peer support, and family support.

Table 7. Results of MANOVA between Sexual Orientation and Protective Factors of School Safety, Peer Support, and Family Support

Source	<u>Multivariate</u>		Univariate		
	λ	F	School Safety	Peer Support	Family Support
Sexual Orientation	.799	18.25***	10.08**	7.03**	53.62***

Note: Multivariate $df = 3, 218$. Univariate $df = 1, 220$, ** $p < .01$, *** $p < .001$

I then assessed group differences (LGBTQ vs. non-LGBTQ participants) on perceptions of school membership. The results of an $F_{\max}$ test revealed equal variances ($F_{\max} = 1.22, ns$) between the sexual orientation groups on the school membership mean composite scores. Therefore, I proceeded with an independent t-test instead of a Mann Whitney-U non-parametric test. As predicted, LGBTQ participants ($M = 3.40, SD = .81$) had significantly lower perceptions of school membership compared to heterosexual participants ($M = 3.96, SD = .73$), $t(220) = 4.82, p < .001$. There was a medium effect size for school membership ($d = .73$) between the sexual orientation groups (Cohen, 1988).

Research questions 4-7. Moderation was chosen to answer Research Questions 4 through 7 since this analysis can detect changes in the relation between two variables (victimization and trauma) as a function of a third variable also known as the moderator variable (i.e., family support, school safety, school membership, and peer support). To test for moderation, I used a hierarchical (sequential) multiple regression analysis. Hierarchical multiple regression analyses are preferred when the independent variable and moderator variable are continuous in order to reduce the likelihood of Type I and Type II errors (Baron & Kenny, 1986).

Because HBV items were embedded within the GBV and CBV measures, participants were only asked to rate trauma following acts of GBV or CBV, but not HBV. The moderators in each of the research questions included the supportive factors of family support, peer support, school membership, and school safety using the mean composite scores from the scales detailed in the “Variables and Measures” section. The mean composite scores for GBV and CBV were used as the independent variables for all the multiple regression models. All the independent variables and moderators were mean-centered in order to control for effects of multicollinearity.

Pearson Product-Moment correlations were calculated between the independent variables (GBV and CBV) and the dependent variables (G-trauma and C-trauma); see Appendix Q. Tabachnick and Fidell (2007) recommend that before conducting multiple regression analysis with moderation, independent variables should be strongly correlated with the dependent variable. Results of the bivariate correlations revealed strong, positive correlations between GBV and G-trauma ($r = .84$) as well as between CBV and C-trauma ($r = .87$). Tabachnick and Fidell also recommend that moderator variables be weakly correlated with both the independent variable and the dependent variable ($r < .60$). Thus, additional correlations were conducted between the moderator variables (i.e., school safety, school membership, peer support, and family support) and the independent and dependent variables. Appendix Q presents the results of the correlations between the moderator, independent, and dependent variables. Because the moderators were weakly correlated with the independent and dependent variables ($r < .60$), they were deemed acceptable to include in the multiple regression analyses for Research Questions 4 through 7.

I filtered participants by sexual orientation and tested each sexual orientation group (i.e. LGBTQ and heterosexual) separately in the hierarchical multiple regression analyses. Following guidelines for moderation as suggested by Baron and Kenny (1986), I computed an interaction term for each moderator and independent variable by multiplying the mean centered moderator by the mean centered independent variable. I then conducted a multiple regression with independent variables (CBV and GBV) in step 1 and interaction terms in step 2. I compared results of the hierarchical multiple regression analysis with and without the interaction terms to determine whether or not the external supportive factors (i.e., family support, peer support, school membership, and school safety) decreased level of G-trauma and C-trauma. If the main

effects of the interaction terms were significant ($p < .05$) at step 2, then the supportive factors appeared to moderate the relation between victimization and G-trauma and C-trauma.

Research question 4: Among LGBTQ participants, do external sources of support moderate the relation between GBV and G-trauma?

Refer to Table 8 for results of the multiple regression analysis. Participants were filtered by sexual orientation status. Those who identified as LGBTQ were included and those who identified as heterosexual were excluded. I included the independent variable of GBV and the moderator variables of family support, peer support, school membership, and school safety in step 1 of the analysis. When combined, the moderators and independent variable accounted for a significant level of variance in G-trauma, $R^2 = .72$, $F(5, 48) = 24.74$, $p < .001$. An interaction term with the centered variables was created with GBV being paired with each protective factor (i.e., GBV x school safety, GBV x school membership, etc.). Again, a combination of GBV, the protective factors, and interaction terms revealed a significant level of variance in G-trauma, $R^2 = .76$, $F(9, 44) = 15.81$, $p < .001$.

Predictors. The results of the hierarchical regression analysis for Research Question 4 are presented in Table 8. Because the model was significant at both steps 1 and 2 and there was an increase in R^2 at step 2, then it can be concluded that a combination of the protective factors and GBV impacted G-trauma. Only the main effects of GBV remained significant at step 1 ($\beta = .95$) and step 2 ($\beta = 1.04$) of the model. Therefore, GBV is a significant predictor of G-trauma. GBV accounted for 50% of the variance in G-trauma scores at step 1 and 36% at step 2. At step 2, for every one-unit change in the level of GBV, LGBTQ participants' level of G-trauma increased by 1.34 points.

Moderators. Following guidelines by Baron and Kenny (1986), to determine whether moderation occurred, the regression model was examined for a change in R^2 and significant main effects ($p < .05$) by the interaction terms at step 2. Since none of the interaction effects and change in R^2 were significant at step 2, it did not appear that any of the potential protective factors moderated the effects of GBV on levels of G-trauma among LGBTQ participants. The interaction effect between school safety and GBV was the only protective factor approaching a significant level ($p = .06$).

Table 8. Interaction Effects of Protective Factors and GBV on Predicting G-Trauma among LGBTQ Participants (N = 54)

Model and IVs	b	SE (b)	β	R^2	sr_i^2
Step 1:				.72***	
GBV	1.22	.13	.95***		.50
Peer Support	.16	.13	.13		.01
Family Support	-.03	.09	-.03		.00
School Membership	-.12	.15	-.10		.00
School Safety	.20	.15	.16		.01
Step 2:				.76***	
GBV	1.34	.16	1.04***		.36
Peer Support	.10	.15	.08		.00
Family Support	-.07	.10	-.06		.00
School Membership	-.20	.17	-.02		.00
School Safety	-.13	.20	-.11		.00
GBV x Peer Support	.14	.19	.13		.00
GBV x Family Support	.04	.12	.04		.00
GBV x School Membership	-.16	.19	-.17		.00
GBV x School Safety	.36	.19	.39		.02
Final $R^2 = .76$, $F(9, 44) = 15.81$, $p < .001$; Step 1 to Step 2 $\Delta R^2 = .04$, <i>ns</i> . *** $p < .001$					

Research question 5: Among LGBTQ participants, do external sources of support moderate the relation between CBV and C-trauma?

Following data analysis procedures described in Research Question 4, I conducted a hierarchical multiple regression with the same moderators as in Research Question 4 and CBV as the independent variable and C-trauma as the dependent variable. The independent variable and moderators were entered into step 1 of the regression model. The results of this regression analysis are presented in Table 9. As found in Research Question 4, a combination of the moderator variables and independent variable accounted for a significant level of variance in C-trauma, $R^2 = .93$, $F(5, 48) = 135.21$, $p < .001$. As in Research Question 4, I computed interaction terms for the centered variables of CBV and the respective protective factors. The interaction terms were entered into step 2 of the regression model. Again, a combination of the moderators, CBV, and interaction terms accounted for a significant amount of variance in C-trauma, $R^2 = .97$, $F(9, 44) = 164.96$, $p < .001$.

Predictors. As found in Research Question 4, CBV was a significant predictor of C-trauma in both steps 1 ($\beta = 1.00$) and 2 ($\beta = 1.40$) of the regression analysis. CBV accounted for 33% of variance in C-trauma scores at step 2. For every one unit increase in CBV, scores in C-trauma increased by 3.31 points. Family support was also a significant predictor of C-trauma at step 2 ($\beta = .06$). For every one unit increase in family support, C-trauma scores increased by .05 points.

Moderators. Significant interaction terms ($p < .05$) were examined in order to determine whether the protective factors moderated the relation between CBV and C-trauma. Only the interactions between school safety and CBV ($\beta = -.15$) and between family support and CBV ($\beta = .43$) were significant at step 2. The interaction terms of school safety accounted for 1% and

family support 2% of the variance in C-trauma scores at step 2. Figure 2 displays the interaction effects of family support and Figure 3 for school safety. For every unit increase in perception of school safety, the impact of CBV on rates of C-trauma decreased by .44 points (see Table 9). For every unit increase in perception of family support, the effect of CBV on rates of C-trauma increased by .64 points (see Table 9). The other two moderators (i.e., peer support and school membership) did not appear to significantly impact the relation between CBV and C-trauma.

Table 9. Interaction Effects of Protective Factors and CBV on Predicting C-Trauma among LGBTQ Participants (N = 54)

Model and IVs	b	SE (b)	β	R^2	sr_i^2
Step 1:				.93***	
CBV	2.35	.10	1.00***		.85
Peer Support	.07	.05	.07		.00
Family Support	.06	.04	.07		.00
School Membership	.03	.06	.03		.00
School Safety	-.07	.05	-.07		.00
Step 2:				.97***	
CBV	3.31	.15	1.40***		.33
Peer Support	.04	.04	.05		.00
Family Support	.05	.03	.06*		.00
School Membership	-.01	.04	-.01		.00
School Safety	-.04	.04	-.04		.00
CBV x Peer Support	.18	.12	.07		.00
CBV x Family Support	.64	.12	.43***		.02
CBV x School Membership	.22	.14	.10		.00
CBV x School Safety	-.44	.14	-.15**		.01

Final $R^2 = .97$, $F(9, 44) = 164.96$, $p < .001$; Step 1 to Step 2 $\Delta R^2 = .04$, $p < .001$. *** $p < .001$, ** $p < .01$, * $p < .05$

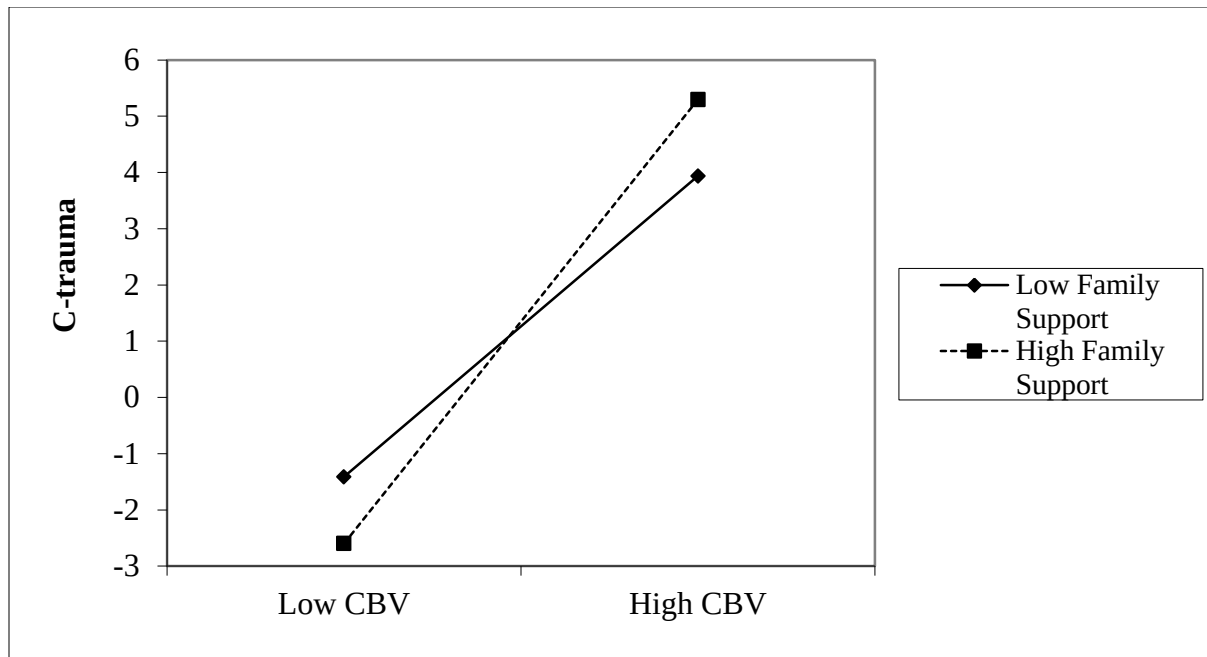


Figure 2. Moderating effects of family support on CBV and C-trauma among LGBTQ participants.

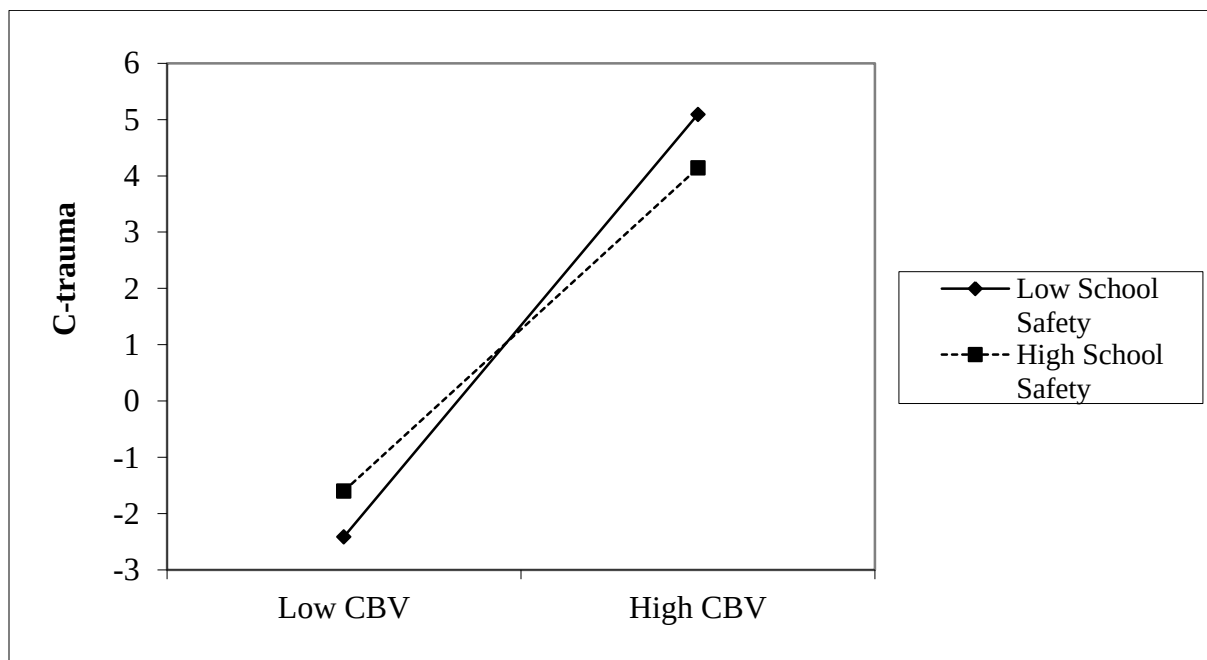


Figure 3. Moderating effects of school safety on CBV and C-trauma among LGBTQ participants.

Research question 6: Among heterosexual participants, do external sources of support moderate the relation between GBV and G-trauma?

The analysis for Research Question 6 followed the same procedures as Research Questions 4 and 5. First, participants were filtered by sexual orientation status. Those who identified as heterosexual were included, while those who identified as LGBTQ were excluded from the regression analysis. The variables of GBV, school safety, school membership, family support, and peer support were entered into step 1 of the hierarchical multiple regression analysis. G-trauma was included as the dependent variable. Table 10 presents the results of the regression analysis for Research Question 6. A combination of the moderators and independent variable accounted for a significant amount of variance in G-trauma, $R^2 = .70$, $F(5, 162) = 73.41$, $p < .001$. At step 1, GBV ($\beta = .82$) was a significant predictor of G-trauma among heterosexual participants. At step 2, all the variables from step 1 were entered along with the same interaction terms as used in Research Question 4. Again, a combination of the moderators, independent variable, and interaction terms accounted for a significant amount of variance in G-trauma, $R^2 = .71$, $F(9, 158) = 42.86$, $p < .001$.

Predictors. At step 2, the independent variables of GBV ($\beta = .84$) and peer support ($\beta = -.14$) were significant predictors of G-trauma. Only GBV remained significant at each step of the model. GBV accounted for 38% and peer support 1% of the variance in G-trauma scores at step 2. For every one unit increase in GBV, G-trauma scores increased by 1.36 points. And for every one unit increase in peer support, G-trauma decreased by .15 points.

Moderators. To test for moderating effects, the interaction terms were examined for significant levels ($p < .05$). The interaction effect of peer support and GBV ($\beta = -.18$) was significant at step 2 and moderated the relation between GBV and G-trauma and accounted for

1% of the variance in G-trauma scores. For every one unit increase in peer support, the effect of GBV on G-trauma decreased by .41 points. Figure 4 displays the results of the moderating effects of peer support on GBV and G-trauma among heterosexual participants. None of the other interaction effects were significant. Therefore, it does not appear that family support, school membership, and school safety buffered the impact of GBV on G-trauma among heterosexual participants.

Table 10. Interaction Effects of Protective Factors and GBV on Predicting G-Trauma among Heterosexual Participants (N = 168)

Model and IVs	b	SE (b)	β	R^2	sr_i^2
Step 1:				.70***	
GBV	1.33	.08	.82***		.54
Peer Support	-.08	.06	-.08		.00
Family Support	-.04	.05	-.04		.00
School Membership	.01	.06	.01		.00
School Safety	.03	.07	.02		.00
Step 2:				.71***	
GBV	1.36	.10	.84***		.38
Peer Support	-.15	.06	-.14*		.01
Family Support	-.05	.05	-.05		.00
School Membership	.05	.07	.05		.00
School Safety	.05	.07	.04		.00
GBV x Peer Support	-.41	.17	-.18*		.01
GBV x Family Support	-.07	.10	-.04		.00
GBV x School Membership	.17	.13	.10		.00
GBV x School Safety	.18	.13	.08		.00

Final $R^2 = .71$, $F(9, 158) = 42.86$, $p < .001$; Step 1 to Step 2 $\Delta R^2 = .02$, *ns*.

*** $p < .001$, * $p < .05$

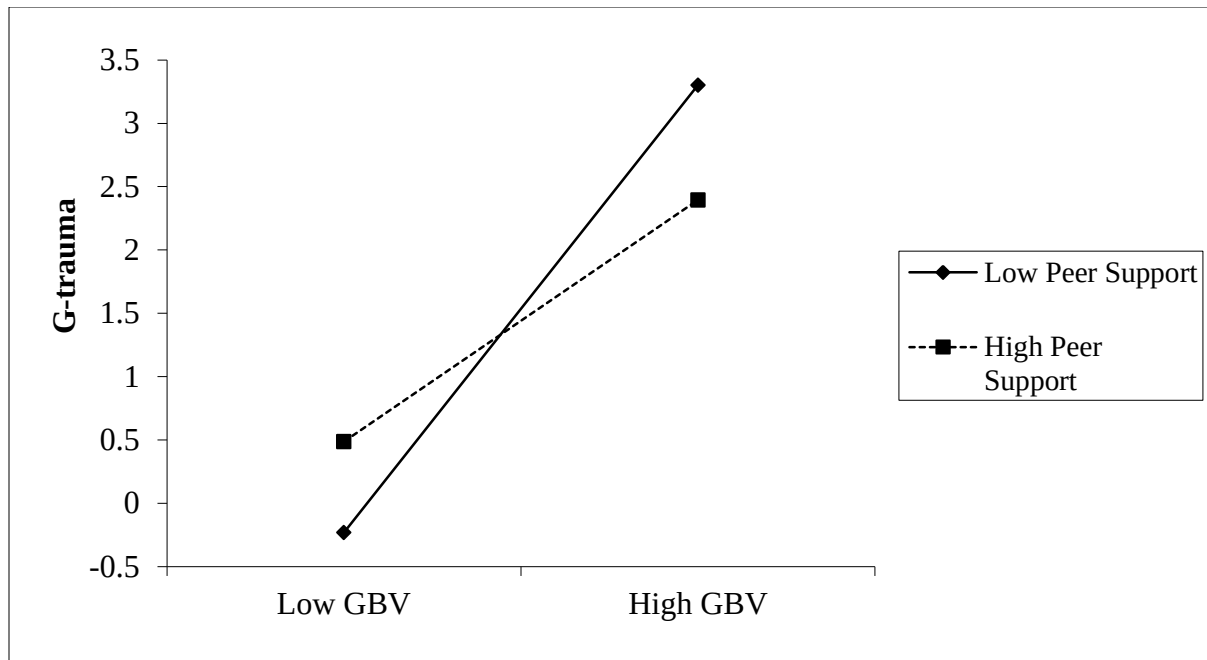


Figure 4. Moderating effects of peer support on GBV and G-trauma among heterosexual participants.

Research question 7: Among heterosexual participants, do external sources of support moderate the relation between CBV and C-trauma? Again, following procedures outlined in Research Question 5, the variables of CBV, family support, peer support, school membership, and school safety were entered into step 1 of the hierarchical multiple regression analysis. C-trauma was included as the dependent variable. The results of the multiple regression analysis are presented in Table 11. At step 1, a combination of the moderators and independent variable accounted for a significant amount of variance in C-trauma, $R^2 = .65$, $F(5, 162) = 61.06$, $p < .001$.

Predictors. At step 1, CBV ($\beta = .78$) and school membership ($\beta = -.15$) were significant predictors of C-trauma among heterosexual participants. CBV accounted for 58% and school membership 1% of the variance in C-trauma scores at step 1. At step 2, all of the variables from step 1 were entered along with the same interaction terms as used in Research Question 5. At

step 2, a combination of the moderators, independent variable, and interaction terms accounted for a significant amount of variance in C-trauma, $R^2 = .77$, $F(9, 158) = 57.51$, $p < .001$. At step 2, CBV ($\beta = .79$) and family support ($\beta = -.11$) were significant predictors of C-trauma. Only CBV remained significant at each step of the model. CBV accounted for 47% and family support 1% of the variance in C-trauma scores at step 2. For every one unit increase in CBV, C-trauma scores increased by 1.48 points. And for every one unit increase in family support, C-trauma decreased by .06 points.

Moderators. To determine if the protective factors moderated the relation between CBV and C-trauma among heterosexual participants, the interaction terms were examined for significant levels ($p < .05$) at step 2 of the regression model. The interaction effect of school membership and CBV ($\beta = -.29$) and of family support and CBV ($\beta = -.16$) were significant moderators between CBV and C-trauma. Figure 5 displays the moderating effects of family support while Figure 6 shows moderating effects of school membership on CBV and C-trauma. Both school membership and family support accounted for 2% of the variance in C-trauma at step 2. For every one unit increase in school membership support, the effect of CBV on C-trauma decreased by .54 points. And for every one unit increase in family support, the effect of CBV on C-trauma decreased by .43 points. It did not appear that peer support and school safety were significant moderators of CBV on C-trauma among heterosexual participants.

Table 11. Interaction Effects of Protective Factors and CBV on Predicting C-Trauma among Heterosexual Participants (N = 168)

Model and IVs	b	SE (b)	β	R^2	sr_i^2
Step 1:				.65***	
CBV	1.46	.09	.78***		.58
Peer Support	.01	.04	.02		.00
Family Support	-.01	.03	-.02		.00
School Membership	-.09	.04	-.15*		.01
School Safety	.02	.04	.02		.00
Step 2:				.77***	
CBV	1.48	.08	.79***		.47
Peer Support	.01	.03	.02		.00
Family Support	-.06	.02	-.11*		.01
School Membership	-.04	.03	-.06		.00
School Safety	-.03	.04	-.04		.00
CBV x Peer Support	-.11	.16	-.05		.00
CBV x Family Support	-.43	.13	-.16**		.02
CBV x School Membership	-.54	.13	-.29***		.02
CBV x School Safety	-.12	.17	-.03		.00

Final $R^2 = .77$, $F(9, 158) = 57.51$, $p < .001$; Step 1 to Step 2 $\Delta R^2 = .11$, $p < .001$.

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

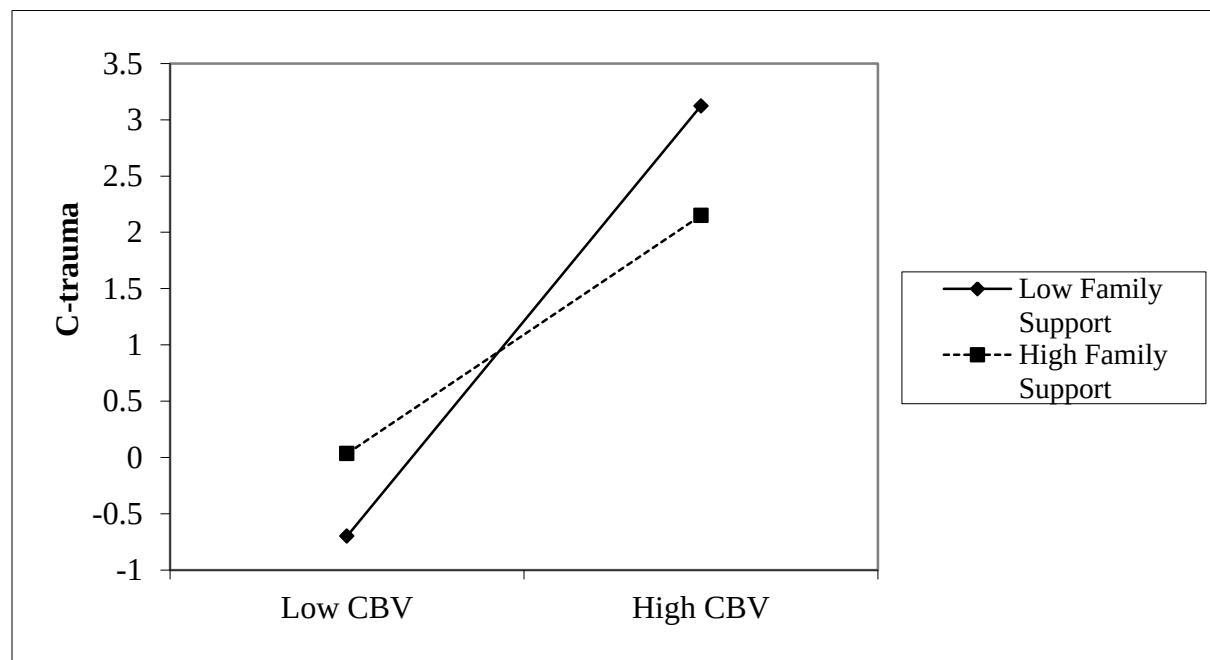


Figure 5. Moderating effects of family support on CBV and C-trauma among heterosexual participants.

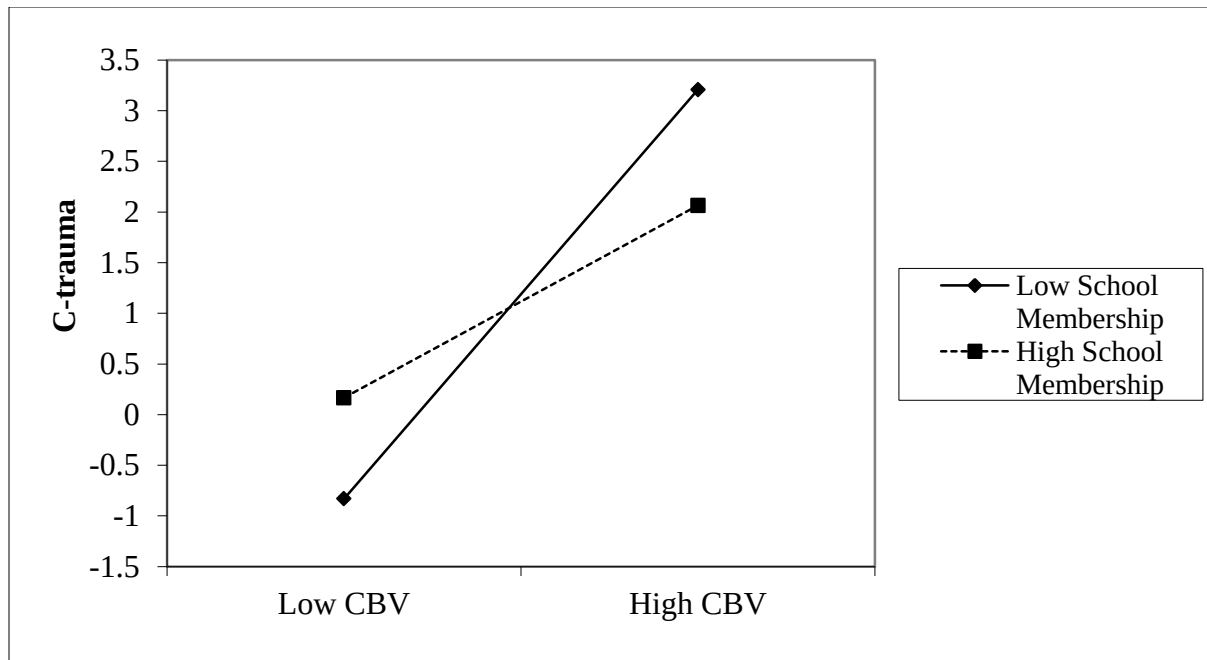


Figure 6. Moderating effects of school membership on CBV and C-trauma among heterosexual participants.

Summary of Results from the Multiple Regression Analyses

Regardless of sexual orientation, being a victim of either type of bullying (i.e., GBV or CBV) significantly predicted related trauma levels. The higher the level that participants reported being victimized, the greater the level of perceived trauma they reported. However, the potential protective factors affected the relation between victimization and trauma differently depending on participants' sexual orientation status.

Predictors and moderators of trauma among LGBTQ participants. Table 12 displays results of the significant contributors to G-trauma and C-trauma for LGBTQ participants.

Besides GBV, no other independent variables in the regression model significantly predicted level of G-trauma. Therefore, it did not appear that any of the potential protective factors helped decrease the level of G-trauma. In the regression model for C-trauma, family support was a significant predictor of C-trauma. C-trauma and family support were positively related, which

indicated the more family support LGBTQ participants reported, the more likely they also reported C-trauma. The moderating effects of family support on the relation between CBV and C-trauma had a similar relation as the family support predictor. The higher the level of family support LGBTQ participants rated, the higher the level of CBV and C-trauma they reported. Although it was a moderator, family support did not decrease level of C-trauma due to CBV as predicted. Instead, a more salient protective factor of C-trauma among LGBTQ participants was level of perceived school safety. With high levels of perceived school safety, LGBTQ participants are more likely to report lower levels of CBV and C-trauma.

Table 12. Significant Contributors to G-Trauma and C-Trauma for LGBTQ Participants (N = 54)

Trauma	Variable	b	β	sr_i^2
G-trauma:	GBV (Step 1)	1.22	.95***	.50
	GBV (Step 2)	1.34	1.04***	.36
C-trauma:	CBV (Step 1)	2.35	1.00***	.85
	CBV (Step 2)	3.31	1.40***	.33
	Family Support (Step 2)	.05	.06*	.00
	Family Support x CBV	.64	.43***	.02
	School Safety x CBV	-.44	-.15**	.01

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

Predictors and moderators of trauma among heterosexual participants. See Table 13 for the significant predictors and moderators that contributed to G-trauma and C-trauma scores among the heterosexual participants. Although none of the protective factors influenced the relations between GBV and G-trauma among LGBTQ participants, peer support was both a significant predictor and moderator for heterosexual participants. Peer support was significantly negatively related to G-trauma. The higher the level of perceived peer support among

heterosexual participants, the lower level of G-trauma they reported. Peer support also moderated the relation between GBV and G-trauma in the expected direction. As level of peer support increased, the level of GBV and G-trauma decreased. This indicates that having a high level of peer support is a potential protective factor of G-trauma among heterosexual participants.

Peer support did not protect from effects of CBV on level of C-trauma. Similar to the regression model for LGBTQ participants, family support was a significant predictor of C-trauma for heterosexual participants. However, the relation between the family support predictor and C-trauma differed between the sexual orientation groups. Family support and C-trauma were negatively related, which indicated that as the level of family support increased, the level of C-trauma decreased. Family support also helped decrease the association between CBV and C-trauma. Having a high level of family support helped decrease C-trauma among heterosexual participants. In addition to the moderating effects of family support between CBV and C-trauma, school membership was also a significant predictor and moderator. The higher the amount of school membership, the lower the level of CBV and C-trauma was reported by heterosexual participants. Thus, both family support and school membership are potential protective factors of CBV and C-trauma.

Table 13. Significant Contributors to G-Trauma and C-Trauma for Heterosexual Participants (N = 168)

Trauma	Variable	b	β	sr_i^2
G-trauma:	GBV (Step 1)	1.33	.82***	.54
	GBV (Step 2)	1.36	.84***	.38
	Peer Support (Step 2)	-.15	-.14*	.01
	Peer Support x GBV	-.41	-.18*	.01
C-trauma:	CBV (Step 1)	1.46	.78***	.58
	School Membership (Step 1)	-.09	-.15*	.01
	CBV (Step 2)	1.48	.79***	.47
	Family Support (Step 2)	-.06	-.11*	.01
	Family Support x CBV	-.43	-.16**	.02
	School Membership x CBV	-.54	-.29***	.02

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

CHAPTER V:

CONCLUSION AND IMPLICATIONS

The purpose of my retrospective study was to compare rates of victimization by bullying, trauma due to bullying, and protective factors between those who identify as heterosexual versus LGBTQ during their last year of high school. High school is the time when many individuals publically disclose their LGBTQ identities to peers and family members and thus, there becomes a heightened risk for LGBTQ youth to be victimized within their high school environments. Thus, another goal of my study was to explore whether the potential protective factors of family support, peer support, school membership, and school safety provided a moderating effect for the impact of trauma due to victimization by bullying among LGBTQ participants. I also explored whether these protective factors differed between participants who identify as heterosexual and those who identify as LGBTQ.

Overview of Salient Findings

My results suggest there are higher rates of victimization during the last year of high school by the three types of bullying (i.e., cyber, general, and homophobic) as well as higher rates of trauma due to cyber and general bullying among participants who identify as LGBTQ compared to those who identify as heterosexual. Similar findings were reported in studies that compared rates of victimization by general bullying (Poteat et al., 2011; Robinson & Espelage, 2011; Williams et al., 2005), cyberbullying (Robinson & Espelage, 2011; Schneider et al., 2011), and homophobic bullying (Burton et al., 2013; Poteat et al., 2011; Robinson & Espleage, 2011) between LGBTQ and heterosexual participants.

The LGBTQ participant group also reported significantly lower rates of support from friends and family as well as lower rates of perceived safety and membership within their high

schools compared to the heterosexual participant group. Other studies have found lower rates of perceived peer support (Williams et al., 2005), family support (Eisenberg & Resnick, 2006; Espelage et al., 2008; Poteat et al., 2011), school membership (Birkett et al., 2009; Espelage et al., 2008; Murdock & Bolch, 2005; Poteat et al., 2011; Robinson & Espelage, 2011), and school safety (Eisenberg & Resnick, 2006; McGuire et al., 2010) among LGBTQ participants in comparison to their heterosexual peers.

Using the Fergus and Zimmerman (2005) protective factor model to explore external sources of support for students who have experienced some form of bullying victimization, it appears that all four of the protective factors promote resilience to trauma from bullying. The protective factors impacted LGBTQ and heterosexual participants differently and varied by type of victimization. However, when assessing whether supportive factors moderated the relation between GBV and trauma from general bullying, some of my results did not occur as predicted. None of the protective factors buffered the effects of GBV on level of trauma due to general bullying among the LGBTQ participants. Among heterosexual participants, one of the protective factors produced moderating effects on GBV and trauma due to general bullying as hypothesized. Family support was a protective factor for heterosexual participants who experience high levels of GBV.

As for the moderating effects of the protective factors on CBV and the effects of trauma due to cyberbullying, family support was a significant moderator for both of the sexual orientation groups. However, family support did not moderate CBV and trauma due to cyberbullying in the anticipated direction for the LGBTQ group. LGBTQ participants who reported high levels of CBV and high levels of family support tended to also have higher levels of trauma due to cyberbullying. Possibly, among LGBTQ participants, more intense experiences

of cyberbullying triggered the need for these participants to seek out more family support compared to LGBTQ students with lower levels of cyberbullying victimization. As found in a previous study (Buck et al., 2013), school safety appears to be a more salient protective factor for CBV among LGBTQ participants. LGBTQ participants who perceived higher levels of school safety and higher levels of CBV tended to report lower levels of trauma from cyberbullying, than those indicating lower levels of perceived school safety.

For heterosexual participants, family support was a significant moderator and impacted the relation between CBV and trauma from cyberbullying in the hypothesized direction. Heterosexual participants who reported high levels of family support and high levels of CBV tended to indicate lower levels of perceived trauma due to cyberbullying. Additionally, school membership also appeared to buffer the effects of CBV on level of trauma due to cyberbullying. Heterosexual participants who reported higher levels of school membership and high levels of CBV were more likely to report lower levels of trauma due to cyberbullying.

Implications

School-based supports. Results of this study suggest that improving perceptions of school safety among LGBTQ participants should be a key component of school-based supports for LGBTQ victims. Many schools are adopting Gay-Straight Alliances (GSAs) as a school-based resource for LGBTQ participants and heterosexual allies. According to GLSEN (2007), GSAs are “student-led, school-based clubs open to all members of the student body regardless of sexual orientation” (p. 1). GSAs can provide various roles within the schools. They can: 1) represent a safe place for LGBTQ students and allies; 2) raise awareness of LGBTQ issues within the school; and 3) offer counseling and supportive services to LGBTQ students (Griffin, Lee, Waugh, & Beyer, 2004).

Research has demonstrated that the mere presence of a GSA in a school can increase feelings of safety among LGBTQ students, whether or not the students are actual members of the GSA (Walls, Kane, & Wisneski, 2010). In a study conducted by GLSEN (2007), LGBTQ students who attended schools with GSAs reported feeling safer in school because of their sexual orientation compared to LGBTQ students at schools without GSAs. Goodenow, Szalacha, and Westheimer (2006) found similar results in their study of 202 sexual minority students from 52 schools within Massachusetts. LGBTQ students in schools with GSAs reported lower rates of GBV and increased perceptions of school safety compared to LGBTQ students in schools with no GSAs.

A qualitative study conducted by Lee (2002) with seven LGBTQ youth GSA members from Salt Lake City, Utah, suggests a positive relation between feelings of school safety and GSA membership. All of the high school students in this study reported incidents of physical assault and name calling prior to becoming a GSA member. After the students became involved with the GSA, they reported feeling safer in their high school and encountered fewer incidents of verbal GBV and no incidents of physical GBV. One participant commented on feeling safe and empowered due to the support from the school administration and staff (Lee, 2002):

I think (increased safety) probably has a lot to do with them seeing us as being really covered by the administration and by teachers. They know we have a faculty sponsor and they know that the principal checks up on us often, so I'm sure they see us as being out of their jurisdiction. We have a network of power. (p.21)

Although I did not find a moderating effect of school membership on victimization and trauma, school membership and school safety were strongly positively correlated to one another ($r = .61$). GSAs have also been found to increase feelings of school belonging among LGBTQ students

(Kosciw & Cullen, 2002). Therefore, if an LGBTQ student perceives a high level of safety at school, then it is very possible the student will also perceive a high level of school membership.

LGBTQ anti-bullying laws and school policies. In addition to the active role of GSAs in promoting and instilling feelings of safety and acceptance among sexual minority students, anti-bullying legislation is a potential protective measure for LGBTQ high school students. Since the 1990s, some states are becoming involved in the “Safe Schools” movement to advocate for school-based policies and supports for LGBTQ students, nationwide. In a social policy report by Russell, Kosciw, Horn, and Saewyc (2010), 16 states have current legislature addressing acts of LGBTQ-based discrimination or bullying in the schools. Research shows that LGBTQ students living in states that have enacted LGBTQ anti-bullying laws have reported lower rates of HBV compared to LGBTQ students in states with no such protective laws (Kosciw, Diaz, & Greytak, 2009). Currently, national organizations such as GLSEN, are pushing to pass a federal law, known as the Safe Schools Improvement Act, that would specifically protect LGBTQ students from GBV, CBV, and HBV within K-12 public schools across the US (Russell et al., 2010). This bill has been presented to Congress, but has not yet been voted on.

Family and peer support. Although family support did not have a positive moderating effect on trauma due to general or cyberbullying for LGBTQ participants, it did make a difference among participants who were heterosexual. In a meta-analysis of 89 school-based bullying intervention programs, Ttofi and Farrington (2011) found parent training as an effective intervention. Trainings typically involved providing after-school presentations to parents regarding how to effectively handle bullying incidents. Investigations into the aspects of family support that negatively impact trauma due to cyberbullying among LGBTQ students are warranted.

Surprisingly, programs that included elements of peer mediation, peer mentoring, and bystander intervention resulted in an increase in acts of GBV (Ttofi & Farrington, 2011). Despite the finding that peer support moderated the effects of GBV on trauma from general bullying, results of the meta-analysis suggests that using a peer-driven model of bullying intervention may not be an effective approach to reduce acts of GBV in the schools. Instead, schools should establish a strong family-school connection when implementing an anti-bullying program.

However, Ttofi and Farrington (2011) only addressed relevant studies of parental support related to acts of GBV and not CBV. Although some peer-refereed articles provide suggestions and strategies for parents and schools on how to intervene and prevent acts of CBV (Couvillon & Illieva, 2011; Diamanduros, Downs, & Jenkins, 2008; Notar, Padgett, & Roden, 2011), none of the strategies have a clear research base to verify the effects of the intervention. The development of experimental designs to evaluate the proposed strategies for CBV is warranted. Results of my study suggest the importance of including elements of family involvement and improving feelings of membership and safety within the high school environment.

Implications for the Practice of School Psychology

LGBTQ issues and practical applications of LGBTQ supports within the schools have been well-covered within the school psychology literature, particularly within the National Association of School Psychologists (NASP) position statements and publications (see *Communiqué* and *School Psychology Review*). The NASP (2011) position statement on LGBTQ youth suggests that schools should implement similar supports as described above: 1) nondiscrimination and anti-bullying policies related to LGBTQ youth; 2) educate students and staff on LGBTQ-related issues; 3) intervene directly when presented with LGBTQ-based bullying; 4) promote attitudes within the school that recognize the dignity and rights of LGBTQ

students; and 5) recognize strength instead of negative outcomes to promote resilience of LGBTQ youth. NASP suggests that school psychologists implement in-service training to teachers and families regarding risk factors of LGBTQ youth, such as suicide, depression, and victimization and how to advocate for the needs of LGBTQ students in the schools.

Additionally, school psychologists need to assess rates of victimization in their schools, and if possible, determine rates of GBV, HBV, and CBV among LGBTQ students through the use of school-wide survey instruments, similar to measures used in the Boston Youth Survey and Dane County Youth Survey. These data can better inform schools of appropriate intervention measures, such as protocols for how to handle LGBTQ-based bullying, and if preventative measures, such as GSAs and anti-bullying policies, need to be established. NASP and GLSEN have a wealth of resources on how to set up a Safe Space for LGBTQ students in the schools, how to draw teacher and student awareness to LGBTQ issues, and how to form a GSA within the school.

Limitations and Future Directions

The retrospective nature of the current study provides a potential limitation in terms of the validity of the results. Surveying participants immediately following their high school experience rather than a year or more later may lead to results that vary from my findings. Unfortunately, due to the controversy surrounding the sampling of LGBTQ students within the schools, especially within East Tennessee, a retrospective study posed as the best option to obtain the data necessary to address the research questions in this study. In addition to being retrospective, this study also asked for perceptions of experiences during one's last year of high school instead of across all four years. Considering the typical age of LGBTQ disclosure occurs

at 15 or 16 years-old, researchers should assess whether age of disclosure is related to increased rates of GBV, CBV, and HBV and decreased rates of support.

In my review of LGBTQ student sampling procedures, I noted that some researchers were given permission to administer school county district surveys or gain access to school survey data. For example, Johnson and colleagues (2011) administered the Boston Youth Survey to students in the Boston Public School system, and several researchers have gained permission to access the Dane County Youth Survey data within Illinois (Birkett et al., 2009; Espelage et al., 2008; Poteat et al., 2011). Both of these school district surveys (Dane County Youth Survey and Boston Youth Survey) contain items that ask students about their current sexual orientation status. They provide important models for encouraging school districts with reticent administrators and parents to monitor their own student populations.

School psychologists need to explore ways to break the barriers involved with gaining consent and assent to sample high school students about their sexual orientation and gender expression. Results of this study and others suggest LGBTQ individuals are at a higher risk for experiencing rates of GBV, CBV, and HBV than their heterosexual peers. Providing school-wide surveys to establish those students at risk, pre- and post-implementation of anti-bullying policies, supports, and interventions, will allow schools to evaluate effects of their anti-bullying programs.

The final LGBTQ participant sample was representative of a wide range of geographic areas (see Table 1, pg. 33). As Table 1 depicts, LGBTQ participants came from college and university campuses across the United States. It is difficult to determine whether the participants who attended that institution were classified as out-of-state, which presents the possibility that they also attended a high school in an area different from their college. Besides improving recruitment effort of LGBTQ participants from across the United States, in future studies, it

would be important to include a demographic item related to geographic origin for college students. United States area of origin for the LGBTQ participants may have influenced results of this study. Geographic regions within the United States such as the Northeast and the West often have more school-based supports for LGBTQ students than other areas, such as the South and Midwest (Fetner & Kush, 2008). Thus, the variations in the ability for schools to provide supports to LGBTQ students may play a prominent role as a protective variable in future studies.

Another limitation of this study includes the CBS measure. I obtained a Cronbach's alpha of .68, which ranges from acceptable to questionable as a reliable measure (George & Mallery, 2003). This may have been due to converting a dichotomous scale from Smith and colleagues' (2008) bullying scale into a continuous Likert-type scale and due to the scale being a brief rate measure. Although some continuous measures of GBV exist, there are few scales that specifically target CBV. As CBV is considered a newer phenomenon than GBV, researchers should continue to develop reliable and valid measures of this construct through exploratory factor analysis procedures. Additionally, all of the significant moderators within the multiple regression analyses in Research Questions 4-7 had low measures of variance that ranged from .01 to .02. Some of the variables were strongly correlated with one another, such as school membership and peer support ($r = .62$) and school membership and school safety ($r = .61$). The high degree of overlap between these variables may have affected the amount of variance in trauma explained by the moderating variables of family support, peer support, school safety, and school membership.

Summary and Conclusions

Although LGBTQ participants reported lower rates of support and higher rates of victimization and trauma compared to heterosexual participants, it appears that improving

feelings of safety for LGBTQ students within their high school environment is an important component of anti-bullying prevention strategies. Anti-discrimination and anti-bullying policies that safeguard LGBTQ students, as well as the establishment of GSAs, have been shown to improve feelings of safety and reduce instances of victimization by bullying among LGBTQ high school students (Goodenow, et al., 2006; Kosciw et al., 2009; Lee, 2002; Walls et al., 2010). Not only do the preventative measures increase feelings of safety, but they also increase perceptions of school membership among sexual minority youth (Kosciw & Cullen, 2002). Although peer support appeared to improve resilience to CBV among heterosexual students, bullying intervention programs that target peer involvement have not been as effective as those that involve families (Ttofi & Farrington, 2011). Additionally, it appears that establishing a family-school connection, where parents are trained on bullying intervention strategies remains a viable option for heterosexual bully victims. As a school psychologist, it is my hope that as organizations, such as GLSEN and NASP, advocate and draw attention to the risk factors among sexual minority youth, that schools and families will become more open and accommodating in creating a safe and accepting atmosphere for these youth.

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APPENDICES

Appendix A: Description of Research Project for Sona Systems website

Title: Investigating Factors of Resilience from Victimization among Sexual Minority and Majority College Students

Description: This research study will look at the relation between LGBTQ and non-LGBTQ students on rates of traditional bullying and/or cyberbullying victimization and outcomes of trauma. I will also be looking at peer and family support, school membership, and school safety. This study will take approximately 30 minutes to complete. You will be able to access all surveys online via the MrInterview website. If you successfully complete the questionnaire, you will receive 2 credits of participation towards your psychology course. If you have any questions concerning this research study, please contact Allison Buck at [REDACTED] .

Restrictions: You must be at least 18 years-old to participate.

Appendix B: E-mail to Teacher Education Students

Hello,

Thanks for expressing interest in my dissertation study. Once again, I am looking to compare rates of bullying/cyberbullying, trauma, family support, school safety, school membership, and peer support among LGBTQ and non-LGBTQ students who **are 18 years or older**. All questions will ask you to reflect on your **last year of high school**.

To earn credit in your special education class, you must complete the entire survey. A box will appear at the end of the survey asking you to put in your first and last name. I will e-mail your instructor the list of participants so you can receive extra credit. Your responses to survey items will be confidential and I will not associate names with survey responses. Please take the survey once.

Here's the link to the study: [link here]

Feel free to e-mail me if you have any questions.

Thanks again for your help!

Allison Buck

Appendix C: Recruitment E-mail to LGBTQ Student Groups

Hello,

I am a graduate student in the School Psychology program at the University of Tennessee. For my dissertation, I hope to compare rates of bullying/cyberbullying victimization, trauma, and resilience among LGBTQ and non-LGBTQ students. I invite your student organization to participate in my study. All questions will ask you to reflect on your **last year of high school**. The survey is online and should take about 20 minutes to complete.

Participation is voluntary and confidential. You must be at least 18 years-old to participate. After my study is over, I will be providing a brief summary of my results to your student organization. I expect to be finished with data collection and write-up by June 2014. If you would like to participate, please reply to this e-mail and state "our organization agrees to participate". I will then send you a link to the online survey for you to forward to your group members via your e-mail distribution list or social media site (i.e., Facebook, Twitter, etc.).

My study has IRB approval through the University of Tennessee-Knoxville's Office of Research & Engagement. My IRB reference number is 9085 B. If you have questions about my IRB, you can contact Brenda Lawson, Compliance Officer, [REDACTED]

Let me know if you have any questions.

Thank you!

Sincerely,

Allison Buck, M.S.
University of Tennessee-Knoxville
School Psychology Doctoral Candidate

Appendix D: Participation Agreement E-mail to LGBTQ Student Groups

Hello,

I am a graduate student in the Department of Educational Psychology and Counseling at the University of Tennessee. For my dissertation, I hope to compare rates of bullying/cyberbullying, trauma, and resilience among LGBTQ and non-LGBTQ students who are 18 years or older. All questions will ask you to reflect on your last year of high school.

Participation is voluntary and confidential. You must be at least 18 years-old to participate. After my study is over, I will be providing a brief summary of my results to your student organization.

If you would like to participate in my study, please click on the link provided:

(survey link here)

Thank you!

Sincerely,

Allison Buck

Appendix E: Demographic Characteristics of Survey Participants by Sexual Orientation

Characteristic	Heterosexual (n = 171) n (%)	LGBTQ (n = 55) n (%)	Total (N = 226) N (%)
Gender			
Male	69 (40.4)	23 (41.8)	92 (40.7)
Female	102 (59.6)	27 (49.1)	129 (57.1)
Transgender	-	5 (9.1)	5 (2.2)
Ethnicity			
Caucasian	148 (86.5)	42 (76.4)	190 (84.1)
African American	11 (6.4)	4 (7.3)	15 (6.6)
Hispanic	3 (1.8)	2 (3.6)	5 (2.2)
Asian/Pacific Islander	4 (2.3)	1 (1.8)	5 (2.2)
Native American	-	2 (3.6)	2 (0.9)
Mixed	4 (2.3)	4 (7.3)	8 (3.5)
Other	1 (0.6)	-	1 (0.4)
Age			
18	38 (22.2)	11 (20.0)	49 (21.7)
19	55 (32.2)	15 (27.3)	70 (32.0)
20	18 (10.5)	7 (12.7)	25 (11.1)
21 or older	60 (35.1)	22 (40.0)	82 (36.3)
Class year			
Freshman	80 (46.8)	23 (41.8)	103 (46.0)
Sophomore	22 (12.9)	7 (12.7)	29 (12.8)
Junior	19 (11.1)	9 (16.4)	28 (11.9)
Senior	47 (27.5)	14 (25.5)	61 (27.0)
Other	3 (1.8)	2 (3.6)	5 (2.2)

Appendix F: Demographics Questionnaire

1. What is your age?_____
2. What is your gender?
 - ☐ Male
 - ☐ Female
 - ☐ Transgender
3. What is your sexual orientation?
 - ☐ heterosexual
 - ☐ gay
 - ☐ lesbian
 - ☐ bisexual
 - ☐ transgender
 - ☐ questioning my sexual orientation
 - ☐ None of the above
4. What is your class status?
 - ☐ Freshman
 - ☐ Sophomore
 - ☐ Junior
 - ☐ Senior
 - ☐ Other (please explain)_____
5. What is your ethnicity?
 - ☐ Caucasian
 - ☐ African American
 - ☐ Asian/Pacific Islander
 - ☐ Hispanic
 - ☐ Mixed racial
 - ☐ Other (please explain)_____

Appendix G: Bullying Scale

Think back to your **senior year (or last year) of high school**. Then answer the following questions.

Definition of bullying:

Bullying is an action carried out by a group or individual that is repeated over time in order to intentionally hurt another. It involves an imbalance of power which leaves the victim defenseless. Bullying involves acts of physical, verbal, and relational aggression. Examples of physical aggression include hitting, pushing, kicking, or shoving another. Verbal aggression involves rumor spreading, gossiping, and name calling, while relational aggression includes excluding someone from a social group.

Based on the above definition of bullying, during your **last year of high school**, had you been **bullied** ?:

- ☐ Yes
- ☐ No

During your **last year** of high school, how often had you been **bullied** through:

	Never	Rarely	Some- times	Often	Very Often
Being punched, kicked, or physically hurt	☐	☐	☐	☐	☐
Having someone damage/steal your belongings	☐	☐	☐	☐	☐
Being called names	☐	☐	☐	☐	☐
Being teased	☐	☐	☐	☐	☐
Being threatened	☐	☐	☐	☐	☐
Being left out/excluded	☐	☐	☐	☐	☐
Having rumors spread about me	☐	☐	☐	☐	☐

During your **last year** of high school, had you ever been **bullied**:

	Never	Rarely	Sometimes	Often	Very Often
About your race or ethnic background	☐	☐	☐	☐	☐
About your disability	☐	☐	☐	☐	☐
About your religion or spiritual beliefs	☐	☐	☐	☐	☐
About how you look	☐	☐	☐	☐	☐

Appendix H: Cyberbullying Scale

Think back to your **senior year (or last year) of high school**. Then answer the following questions.

Definition of cyberbullying:

Cyberbullying is a new form of bullying which involves the use of e-mail, instant messaging, chat rooms, websites, mobile phones or other forms of information technology to deliberately harass, threaten, or intimidate someone. Cyberbullying can include such acts as making threats, sending personal, racial or ethnic insults or repeatedly victimizing someone through electronic devices.

Based on the above definition of cyberbullying, during your **last year of high school**, had you been **cyberbullied**?

- ☐ Yes
- ☐ No

During your **last year of high school** how often had you been **cyberbullied** through:

	Never	Rarely	Sometimes	Often	Very Often
Nasty text messages (making threats and comments)	☐	☐	☐	☐	☐
‘Happy slapping’ (pictures/videos recorded on a mobile phone)	☐	☐	☐	☐	☐
Prank or silent phone calls	☐	☐	☐	☐	☐
Rude or nasty e-mails	☐	☐	☐	☐	☐
Insults on a website such as Facebook or MySpace	☐	☐	☐	☐	☐
Insults on Instant Messaging (MSN Messenger/AOL/Yahoo)	☐	☐	☐	☐	☐
Harassed/threatened in a chat room	☐	☐	☐	☐	☐

During your **last year** of high school, had you ever been **cyberbullied**:

	Never	Rarely	Sometimes	Often	Very Often
About your race or ethnic background	☐	☐	☐	☐	☐
About your disability	☐	☐	☐	☐	☐
About your religion or spiritual beliefs	☐	☐	☐	☐	☐
About how you look	☐	☐	☐	☐	☐

Appendix I: Homophobic Bullying Scale

During your **last year of high school**, had you ever been **cyberbullied**:

	Never	Rarely	Sometimes	Often	Very Often
About being perceived as gay, lesbian, transgender, or bisexual	☐	☐	☐	☐	☐

During your **last year of high school**, had you ever been **bullied**:

	Never	Rarely	Sometimes	Often	Very Often
About being perceived as gay, lesbian, transgender, or bisexual	☐	☐	☐	☐	☐

Appendix J: Impact of Event Scale

You indicated you experienced cyberbullying/bullying during your last year of high school.

Below is a list of comments made by people after stressful life events.

Please check each item, indicating how frequently these comments were true for you **DURING YOUR LAST YEAR OF HIGH SCHOOL**. If they did not occur during that time, please mark the “never” column.

Responses:

1 = Never

2 = Rarely

3 = Sometimes

4 = Often

5 = Very Often

- 1 I thought about it when I didn't mean to.
- 2 I avoided letting myself get upset when I thought about it or was reminded of it.
- 3 I tried to remove it from memory because pictures or thoughts about it that came into my mind.
- 4 I had waves of strong feelings about it.
- 5 I had dreams about it.
- 6 I stayed away from reminders of it.
- 7 I felt as if it hadn't happened or it wasn't real.
- 8 I tried not to talk about it.
- 9 Pictures about it popped into my mind.
- 10 Other things kept making me think about it.
- 11 I was aware that I still had a lot of feelings about it, but I didn't deal with them.
- 12 Any reminder brought back feelings about it.
- 13 My feelings about it were kind of numb.
- 14 People I interacted with on a daily basis tended to take my feelings into consideration.

Appendix K: Perceived Social Support from Friends and from Family Scale

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with **friends**. Please check each item with how frequently these statements occurred **DURING YOUR LAST YEAR IN HIGH SCHOOL:**

Responses:

1 = Never

2 = Rarely

3 = Sometimes

4 = Often

5 = Very Often

1. My friends gave me the moral support I needed.
2. Most other people were closer to their friends than I was. (reverse coded)
3. My friends enjoyed hearing about what I thought.
4. Certain friends came to me when they had problems or needed advice.
5. I relied on my friends for emotional support.
6. If I felt that one or more of my friends were upset with me, I'd just keep it to myself. (reverse coded)
7. I felt that I was on the fringe in my circle of friends. (reverse coded)
8. There was a friend I could go to if I was just feeling down, without feeling funny about it later.
9. My friends and I were very open about what we thought about things.
10. My friends were sensitive to my personal needs.
11. My friends came to me for emotional support.
12. My friends were good at helping me solve problems.
13. I had a deep sharing relationship with a number of friends.
14. My friends got good ideas about how to do things or make things from me.
15. When I confided in friends, it made me feel uncomfortable. (reverse coded)
16. My friends sought me out for companionship.
17. I think that my friends felt that I was good at helping them solve problems.
18. I didn't have a relationship with a friend that was as intimate as other people's relationships with friends. (reverse coded)
19. I had gotten good ideas about how to do things from friends.
20. I wished my friends were much different. (reverse coded)

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with their **families**. Please check each item with how frequently these statements occurred **DURING YOUR LAST YEAR IN HIGH SCHOOL:**

1. My family gave me the moral support I needed.
2. I got good ideas about how to do things or make things from my family.
3. Most other people were closer to their family than I was. (reverse coded)

4. When I confided in the members of my family who were closest to me, I got the idea that it made them uncomfortable. (reverse coded)
5. My family enjoyed hearing about what I thought.
6. Members of my family shared many of my interests.
7. Certain members of my family came to me when they had problems or needed advice.
8. I relied on my family for emotional support.
9. There was a member of my family I could go to if I were just feeling down, without feeling funny about it later.
10. My family and I were very open about what we thought about things.
11. My family was sensitive to my personal needs.
12. Members of my family came to me for emotional support.
13. Members of my family were good at helping me solve problems.
14. I had a deep sharing relationship with a number of members of my family.
15. Members of my family got good ideas about how to do things or make things from me.
16. When I confided in members of my family, it made me uncomfortable. (reverse coded)
17. Members of my family sought me out for companionship.
18. I thought that my family felt that I was good at helping them solve problems.
19. I didn't have a relationship with a member of my family that was as close as other people's relationships with family members. (reverse coded)
20. I wished my family was much different. (reverse coded)

Appendix L: Psychological Sense of School Membership Scale

Please check each item, indicating how frequently these comments were true for you while you were at your high school, **DURING YOUR LAST YEAR OF HIGH SCHOOL.**

Responses:

1 = Never

2 = Rarely

3 = Sometimes

4 = Often

5 = Very Often

- 1 I felt like a real part of my high school.
- 2 People at my high school noticed when I was good at something.
- 3 It was hard for people like me to be accepted at my high school. (reverse coded)
- 4 Other students in that school took my opinions seriously
- 5 Most teachers at my high school were interested in me.
- 6 Sometimes I felt as if I didn't belong there. (reverse coded)
- 7 There was at least one teacher or other adult in the high school I could talk to if I had a problem.
- 8 People at that school were friendly to me.
- 9 Teachers there were not interested in people like me. (reverse coded)
- 10 A was included in lots of activities at my high school.
- 11 I was treated with as much respect as other students.
- 12 I felt very different from most other students there. (reverse coded)
- 13 I could really be myself at my high school.
- 14 The teachers there respected me.
- 15 People there knew I could do good work.
- 16 I wish I went to a different school. (reverse coded)
- 17 I felt proud belonging to my high school.
- 18 Other students there liked me the way I am.

Appendix M: Personal Safety Scale

Please check each item, indicating how frequently these comments were true for you while you were at your high school, **DURING YOUR LAST YEAR OF HIGH SCHOOL.**

Responses:

1 = Never

2 = Rarely

3 = Sometimes

4 = Often

5 = Very Often

- 1 I felt safe going to and coming from school.
- 2 I felt safe in the lunchroom.
- 3 I felt safe in my classrooms.
- 4 I felt safe before and after school while on school grounds.
- 5 I felt safe in the school hallways.
- 6 I felt safe in the bathrooms at school.
- 7 Overall, I felt that my high school was a safe school.
- 8 I had seen a gun at school during my last year of high school. (reverse coded)

Appendix N: Informed Consent Form for LGBTQ Student Organization Members

Informed Consent Statement

I am a graduate student in the UT Department of Educational Psychology and Counseling, and I invite you to participate in my research study. I would like to study how cyberbullying and bullying victimization impacts individual feelings of trauma after bullying events. I also would like to study the relations between individuals' evaluation of the support they have received from families, peers, and their high school environments. For most questions in this study, I will ask you to base your answer on events that occurred during your last year of high school.

Participation is voluntary. You must be 18 years or older in order to participate. If you were both a bully and cyberbully victim, then please complete all questions related to both forms of bullying. If at any time you feel uncomfortable answering a question, you may skip it and go on to the next one. This study will take approximately 30 minutes to complete. Consent is implied when you continue on to the questionnaire items.

If at any point during this study you decide not to participate, you can withdraw by logging out of the website. I will not trace your identity to the questionnaires while the data remains on line, and I will remove identifying data when I download the results to my own computer.

Potential Risks Involved

There is minimal risk involved for completing these questionnaires. If responding to these questions should cause you to feel moderate or severe anxiety during or after completing the study questions, please follow up with your university or college's Counseling Center.

Participation in the study is confidential. No personal identifying information, such as your name or your birthdate, will be included in your questionnaire responses. I cannot link your responses to your log-in information or your e-mail address.

Benefits of Participation

There are no direct benefits for completing this study other than contributing to the knowledge base in the area of cyberbullying, bullying, family and peer support, and school connectedness and safety and how these relate to sexual orientation.

At the end of data collection, I will be providing a brief summary of my results to your student organization.

If you are interested in further information regarding this research study, please contact Allison Buck at (e-mail: [REDACTED]) or the faculty advisor, Dr. Sherry Bain, (e-mail: [REDACTED]). For any questions or concerns related to rights of research subjects', please

contact the Institutional Review Board (Compliance Office) at [REDACTED] or e-mail Brenda Lawson at [REDACTED].

If you decide to participate, please complete the survey once.

Please print or save a copy of this consent form for future reference.

Appendix O: Informed Consent Form for Undergraduate Psychology Students

Informed Consent Statement

I am a graduate student in the UT Department of Educational Psychology and Counseling, and I invite you to participate in my research study. I would like to study how cyberbullying and bullying victimization impacts individual feelings of trauma after bullying events. I also would like to study the relations between individuals' evaluation of the support they have received from families, peers, and their high school environments. For most questions in this study, I will ask you to base your answer on events that occurred during your last year of high school.

Participation is voluntary. You must be 18 years or older in order to participate. If you were both a bully and cyberbully victim, then please complete all questions related to both forms of bullying. If at any time you feel uncomfortable answering a question, you may skip it and go on to the next one. If you choose to participate in this study, you will receive 2 points credit for your psychology class. This study will take approximately 30 minutes to complete. Consent is implied when you continue on to the questionnaire items. Your psychology instructor will be able to log on to the HPR website to see if you have participated in my study in order to award you research credit. Credit will be awarded when you go on to complete the items in the questionnaire.

If you decide not to participate, you may choose other opportunities to earn credit that are offered by your psychology instructor. If at any point during this study you decide not to participate, you can withdraw by logging out of the website. I will not trace your identity to the questionnaires while the data remains on line, and I will remove identifying data when I download the results to my own computer. You will still earn 2 points of course credit even if you choose to withdraw during the course of the study.

Potential Risks Involved

There is minimal risk involved for completing these questionnaires. If responding to these questions should cause you to feel moderate or severe anxiety during or after completing the study questions, please contact the UT Student Counseling Center at 865-974-2196 or walk into 1800 Volunteer Blvd. Knoxville, TN 37796

Participation in the study is confidential. No personal identifying information, such as your name or your birthdate, will be included in your questionnaire responses. I cannot link your responses to your log-in information or your e-mail address.

Benefits of Participation

There are no direct benefits for completing this study other than contributing to the knowledge base in the area of cyberbullying, bullying, family and peer support, and school connectedness and safety and how these relate to sexual orientation.

If you are interested in further information regarding this research study, please contact Allison Buck at (e-mail: [REDACTED]) or the faculty advisor, Dr. Sherry Bain, (e-mail: [REDACTED]). For any questions or concerns related to rights of research subjects', please contact the Institutional Review Board (Compliance Office) at [REDACTED] or e-mail Brenda Lawson at [REDACTED].

If you decide to participate, please complete the survey once.

Please print or save a copy of this consent form for future reference.

Appendix P: Informed Consent Form for Teacher Education Students

Informed Consent Statement

I am a graduate student in the UT Department of Educational Psychology and Counseling, and I invite you to participate in my research study. I would like to study how cyberbullying and bullying victimization impacts individual feelings of trauma after bullying events. I also would like to study the relations between individuals' evaluation of the support they have received from families, peers, and their high school environments. For most questions in this study, I will ask you to base your answer on events that occurred during your last year of high school.

Participation is voluntary. You must be 18 years or older in order to participate. If you were both a bully and cyberbully victim, then please complete all questions related to both forms of bullying. If at any time you feel uncomfortable answering a question, you may skip it and go on to the next one. If you choose to participate in this study, you may receive extra credit for your special education class at the discretion of your instructor. This study will take approximately 30 minutes to complete. Consent is implied when you continue on to the questionnaire items. Credit will be awarded when you go on to complete the items in the questionnaire. To ensure you receive credit in your course for completing the questionnaire, please type your first and last name in a box provided at the end of the survey.

Potential Risks Involved

There is minimal risk involved for completing these questionnaires. If responding to these questions should cause you to feel moderate or severe anxiety during or after completing the study questions, please contact the UT Student Counseling Center at 865-974-2196 or walk into 1800 Volunteer Blvd. Knoxville, TN 37796

Participation in the study is confidential. No personal identifying information, such as your name, will be included in your questionnaire responses.

Benefits of Participation

There are no direct benefits for completing this study other than contributing to the knowledge base in the area of cyberbullying, bullying, family and peer support, and school connectedness and safety and how these relate to sexual orientation.

If you are interested in further information regarding this research study, please contact Allison Buck at (e-mail: [REDACTED]) or the faculty advisor, Dr. Sherry Bain, (e-mail: [REDACTED]). For any questions or concerns related to rights of research subjects', please contact the Institutional Review Board (Compliance Office) at [REDACTED] or e-mail Brenda Lawson at [REDACTED].

Please complete the questionnaire once, if you have already participated through another UT course.

Please print or save a copy of this consent form for future reference.

Appendix Q: Correlation Matrix for Variables used in Research Questions 1-7

Measure	1	2	3	4	5	6	7	8	9
1. CBV	-								
2. GBV	.32	-							
3. HBV	.34	.62*	-						
4. G-trauma	.29	.84*	.54	-					
5. C-trauma	.87*	.31	.41	.35	-				
6. Peer Support	-.13	-.36	-.27	-.32	-.15	-			
7. Family Support	-.17	-.24	-.31	-.23	-.22	.36	-		
8. School Membership	-.19	-.50	-.37	-.42	-.24	.62*	.40	-	
9. School Safety	-.11	-.50	-.37	-.38	-.14	.40	.33	.61*	-

* $r > .60$

Appendix R: Frequency of GBV, HBV, and CBV Experiences by Sexual Orientation

GBV Experience and Frequency Table

GBV Experience and Frequency	Heterosexual (n = 171) n (%)	LGBTQ (n = 55) n (%)	Total (N = 226) N (%)
Punched/Kicked/Hurt			
Never/Rarely	169 (98.8)	55 (100.0)	224 (99.1)
Sometimes	2 (1.2)	-	2 (.9)
Often/Very Often	-	-	-
Damaged Belongings			
Never/Rarely	167 (97.7)	50 (90.9)	217 (96.0)
Sometimes	3 (1.8)	4 (7.3)	7 (3.1)
Often/Very Often	1 (0.6)	1 (1.8)	2 (.9)
Called Names			
Never/Rarely	147 (86.0)	32 (58.1)	179 (79.2)
Sometimes	14 (8.2)	11 (20.0)	25 (11.1)
Often/Very Often	9 (5.3)	12 (21.8)	21 (9.3)
Teased			
Never/Rarely	147 (86.0)	32 (58.2)	179 (79.2)
Sometimes	13 (7.6)	9 (16.4)	22 (9.7)
Often/Very Often	11 (6.5)	14 (25.5)	25 (11.1)
Threatened			
Never/Rarely	167 (97.6)	51 (92.7)	218 (96.5)
Sometimes	2 (1.2)	3 (5.5)	5 (2.2)
Often/Very Often	2 (1.2)	1 (1.8)	3 (1.3)
Rumors Spread			
Never/Rarely	145 (84.8)	34 (61.8)	179 (72.6)
Sometimes	13 (7.6)	8 (14.5)	21 (9.3)
Often/Very Often	13 (7.6)	13 (23.6)	26 (11.5)
Excluded/Left Out			
Never/Rarely	145 (84.8)	34 (61.8)	179 (72.1)
Sometimes	14 (8.2)	6 (10.9)	20 (8.8)
Often/Very Often	12 (7.0)	15 (27.3)	27 (11.9)
About Race			
Never/Rarely	169 (98.9)	52 (94.5)	221 (97.8)
Sometimes	2 (1.2)	-	2 (.9)
Often/Very Often	-	2 (3.6)	2 (.9)
About Religion			
Never/Rarely	166 (97.1)	52 (94.5)	190 (84.0)
Sometimes	4 (2.3)	3 (5.5)	24 (10.6)
Often/Very Often	1 (0.6)	-	12 (5.3)

GBV Experience and Frequency (cont)	Heterosexual n (%)	LGBTQ n (%)	Total N (%)
About Appearance			
Never/Rarely	151 (88.3)	39 (70.9)	190 (84.0)
Sometimes	14 (8.2)	10 (18.2)	24 (10.6)
Often/Very Often	6 (3.5)	6 (10.9)	12 (5.3)
About Disability			
Never/Rarely	168 (98.2)	51 (92.7)	219 (96.9)
Sometimes	2 (1.2)	1 (1.8)	3 (1.3)
Often/Very Often	1 (0.6)	1 (1.8)	2 (0.8)

CBV Experience and Frequency Table

CBV Experience and Frequency	Heterosexual (n = 171) n (%)	LGBTQ (n = 55) n (%)	Total (N = 226) N (%)
Nasty text messages			
Never/Rarely	161 (94.1)	51 (92.7)	212 (93.8)
Sometimes	9 (5.3)	2 (3.6)	11 (4.9)
Often/Very Often	1 (0.6)	2 (3.6)	3 (1.3)
‘Happy slapping’			
Never/Rarely	167 (97.7)	53 (96.4)	220 (97.3)
Sometimes	2 (1.2)	2 (3.6)	4 (1.8)
Often/Very Often	1 (0.6)	-	1 (0.4)
Prank/silent phone calls			
Never/Rarely	161 (94.2)	53 (96.4)	214 (94.7)
Sometimes	7 (4.1)	2 (3.6)	9 (4.0)
Often/Very Often	3 (1.8)	-	3 (1.3)
Rude/nasty e-mails			
Never/Rarely	171 (100.0)	54 (98.2)	225 (99.5)
Sometimes	-	1 (1.8)	1 (0.4)
Often/Very Often	-	-	-
Insulted on website			
Never/Rarely	159 (93.0)	44	203 (89.8)
Sometimes	8 (4.7)	7	15 (6.6)
Often/Very Often	4 (2.4)	4	8 (3.6)
Insulted on IM			
Never/Rarely	169 (98.8)	54(98.2)	223 (98.7)
Sometimes	2 (1.2)	1 (1.8)	3 (1.3)
Often/Very Often	-	-	-
Harassed in chatroom			
Never/Rarely	171 (100.0)	53 (96.4)	224 (99.1)
Sometimes	-	2 (3.6)	2 (0.9)
Often/Very Often	-	-	-

CBV Experience and Frequency (cont)	Heterosexual n (%)	LGBTQ n (%)	Total N (%)
About Race			
Never/Rarely	171 (100.0)	54 (98.2)	225 (99.6)
Sometimes	-	1 (1.8)	1 (0.4)
Often/Very Often	-	-	-
About Religion			
Never/Rarely	166 (97.1)	53 (96.4)	219 (96.9)
Sometimes	2 (1.2)	2 (3.6)	4 (1.8)
Often/Very Often	2 (1.2)	-	2 (0.9)
About Appearance			
Never/Rarely	164 (95.9)	47 (85.5)	211 (93.4)
Sometimes	6 (3.5)	5 (9.1)	11 (4.9)
Often/Very Often	1 (0.6)	3 (5.5)	4 (1.7)
About Disability			
Never/Rarely	169 (98.8)	54 (98.2)	223 (98.6)
Sometimes	-	-	-
Often/Very Often	1 (0.6)	-	1 (0.4)

HBV Experience and Frequency Table

HBV Experience and Frequency	Heterosexual (n = 171) n (%)	LGBTQ (n =55) n (%)	Total (N = 226) N (%)
CBV due to LGBTQ			
Never/Rarely	49 (89.1)	170 (99.4)	219 (96.9)
Sometimes	6 (10.9)	1 (0.6)	7 (3.1)
Often/Very Often	-	-	-
GBV due to LGBTQ			
Never/Rarely	34 (61.9)	168 (98.3)	202 (89.4)
Sometimes	11 (20.0)	2 (1.2)	13 (5.8)
Often/Very Often	10 (18.1)	1 (0.6)	11 (4.9)

Vita

Allison Enders-Hunt Buck was born in Boston, MA, and raised in Quincy, MA. She attended Ithaca College, in Ithaca, NY, from 2003-2007. She graduated from Ithaca with a B.A. and studied psychology and Italian. From 2007-2010, Allison worked at the David Lawrence Mental Health Center, in Naples, FL, where she was employed as a clinician, discharge planner and case manager before beginning the School Psychology Ph.D. program at the University of Tennessee-Knoxville in fall of 2010. She completed a M.S. in Applied Educational Psychology in December, 2012, at the University of Tennessee. Allison will graduate in August, 2015, with her Ph.D. in School Psychology upon successful completion of an APA-accredited pre-doctoral internship through the Tennessee Internship Consortium in Knoxville, TN.