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META-ANALYSIS OF SCHOOL CLIMATE AND WELL-BEING OF LGBTQ YOUTH: A CASE STUDY OF ALABAMA'S PUBLIC SCHOOL CLIMATE TOWARD SEXUAL MINORITY STUDENTS

By

MINOO VAFAI

B.S. in Sociology, University of North Alabama, 2015

A THESIS

Submitted in partial fulfillment of the requirements for the degree

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Department of Sociology and Family Studies

College of Arts and Sciences

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Approved by:

Major Professor

Dr. Andrea Hunt

Abstract

Decades of research demonstrates that adolescents who identify as lesbian, gay, bisexual, transgender, or questioning (LGBTQ), are at higher risk of peer victimization, harassment, and bullying compared to heterosexual youth. It is reported that 3 out of every 4 LGBTQ students are verbally harassed and 1 out of every 3 is physically bullied (Kosciw et al., 2014). Exposure to constant victimization, harassment, and bullying can subsequently pave the way to a host of negative psychological and educational outcomes. The current research is a systematic review and a meta-analysis of school climate and its impact on the LGBTQ students. This research investigates whether the disparity in rates of victimization, harassment, and bullying in school can explain adverse psychological and educational outcomes experienced by sexual minority youth. The study also demonstrates the buffering influence of a positive and supportive school climate. In addition, a case study of the policies and practices of Alabama public schools is conducted to evaluate the state's responsiveness towards the needs of the LGBTQ students. Results suggest that sexual minority youth are at an increased risk of victimization, harassment, and bullying. Further, these experiences contribute to a host of adverse psychological and educational outcomes. Moreover, the present study demonstrates that positive and supportive school climate plays a protective role in buffering the negative outcomes experienced by the sexual minority student.

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I only hope that I can make you proud!

Dedication

This thesis is dedicated to my spouse and best friend Dia who has been my biggest support throughout this journey. I am eternally grateful for all her love, patience, and encouragement. Thank you for keeping me sane throughout this process. You are my Rock!

CHAPTER 1. INTRODUCTION

> A safe and supportive school environment in which students have positive social relationships and are respected, engaged in their work and feel competent, matters.
>
> - National School Climate Council, 2007, p.4

According to the No Child Left Behind Act (NCLBA) of 2001, federally funded public schools are under legal and ethical obligations to provide all students with safe and positive educational environment that is free from "violence associated with prejudice and intolerance" (No Child Left Behind Act, 2001). The Center for Disease Control and Prevention (CDC) states that the school environment should be characterized by caring and supportive interpersonal relationships and shared positive norms, goals, and values (CDC, 2009). As such, the school environment should promote and enhance school connectedness which is associated with students' health and educational outcomes (CDC, 2009). However, this is not the reality for many lesbian, gay, transgender, and questioning (LGBTQ) students. Studies show that from a public health and education perspective, the majority of American public schools are unresponsive to the needs of the sexual minority youth (Russell et al., 2011; Birkett et al., 2009).

There is extensive research that demonstrates that sexual minority adolescents are at an increased risk for alienation, anxiety, depression, homelessness, and suicide ideation compared to heterosexual youth (Kim et al., 2009). The increased risk for adverse outcomes should not be assumed as a consequence of one's sexual orientation, but rather as an outcome of the increased risk for exposure to discrimination and victimization (Meyer, 2003). Kosciw et al. (2014) report that most LGBTQ students hear homophobic remarks and comments from peers as well as school faculty and staff. Further, more than half of the sexual minority students do not feel physically and emotionally safe at school and consequently avoid bathrooms, locker rooms,

school functions, and extracurricular activities. As a result, data reveals an increased risk for adverse psychological and educational outcomes among sexual minority youth (Kosciw et al., 2014). The combination of educational, social, and familial instability creates an environment for the sexual minority youth in which survival often takes precedence over education (Kim et al., 2009).

In contrast, positive school climate can significantly buffer the association between sexual minority membership and high levels of adverse psychological and educational outcomes (Birkett et al., 2009; Espelage et al., 2008). A supportive and safe school environment is shown to offer sexual minority youth better odds of educational and social success (Fisher et al., 2008). This is evident in research that shows LGBTQ students who perceive their school climate as positive and safe, experience better health and academic outcomes and are less likely to have suicidal thoughts (Poteat et al., 2012). Schools that have enacted anti-discrimination and anti-homophobic bullying policies help promote a safer environment by sending a message to students, faculty, and staff that respect for diversity and non-conformity is valued and expected (Black et al., 2012). Further, availability of school resources, such as supportive school faculty and staff and the presence of a Gay-Straight Alliance (GSA) club, can affectedly enhance and promote positive and supportive learning environments for sexual minority students (Kosciw et al., 2014).

Purpose

The purpose of the present study is to investigate school climate, its impact on sexual minority students, and to discuss the prevalence of psychological and educational outcome disparities between LGBTQ and heterosexual students. Further, a case study evaluation is provided regarding the policies and practices of Alabama public schools and their responsiveness

towards the needs of LGBTQ students. Policy implications and recommendations to promote safe and supportive school environment are discussed.

Research Questions

The present study is driven by the following research questions:

- Compared to heterosexual students, are sexual minority students at higher risks of experiencing victimization, harassment, and bullying at schools?
- Compared to heterosexual students, are sexual minority students more susceptible to adverse psychological and educational outcomes?
- Is there a relationship between victimization, harassment, and bullying at school and adverse psychological and educational outcomes?
- Does a positive school climate (presence of GSA, supportive faculty and staff, and comprehensive school policies) moderate the prevalence of victimization, harassment, and bullying among sexual minority students?
- Is a positive school climate (presence of GSA, supportive faculty and staff, and comprehensive school policies) associated with better psychological and educational outcomes for sexual minority students?

CHAPTER 2. REVIEW OF LITERATURE

Homophobia

Homophobia refers to broad range of negative beliefs, stereotypes, and attitudes towards sexual minority individuals (as cited in Wright, Adams, & Bernat, 1999). It is defined as "degrading and stigmatizing words and language" (Poteat & Espelage, 2005, p. 514). Research shows that hearing constant homophobic remarks is associated with numerous negative outcomes, including an increased sense of alienation and depression among LGBTQ adolescents (Espelage et al., 2008; Birkett et al., 2009). Homophobic teasing and bullying in schools is suggestive of an environment that is unwelcoming and unsupportive of sexual minority students (Birkett et al., 2009). Unsupportive school climate along with prevailing anti-LGBTQ dialogue may lead to lower self-image, internalization of homophobia, and acceptance of negative social values toward self (Meyer, 2003; Birkett et al., 2009; Espelage et al., 2008). As such, sexual minority adolescents experience internal stress that can be treacherous, resulting in adverse effects on the youth's developmental process and mental health (Meyer, 2003).

Poteat and Espelage (2005) conducted a study to investigate the relationship between bullying behavior and homophobic epithets. Their study revealed a strong association between homophobic content and aggressive behavior, such as bullying and fighting. It is also noteworthy to mention that LGBTQ students were not the exclusive targets of homophobic remarks. The students who were non-conforming to the stereotypical notion of masculinity and femininity, regardless of their sexual orientation, were also targeted. Poteat and Espelage (2005) further demonstrated that students who were harassed by homophobic remarks were also victims of bullying.

Bullying and Harassment

Transitioning from elementary to middle school is not without its challenges for many students especially since middle school is associated with higher rates of bullying behavior (Birkett et al., 2009). Given that LGBTQ youth experience a much higher rate of bullying than their heterosexual counterparts (Birkett et al., 2009; Kim et al., 2009; Kosciw et al., 2014), this transition can be particularly challenging for many sexual minority students. Bullying behavior often occurs in the context of an interpersonal relationship that carries an actual or perceived asymmetric power between the perpetrator and the victim (Olweus, 1977). Olweus (1977) characterized being bullied as repeated exposure to intentional negative actions by another peer. He defined "negative actions" as offensive and degrading behavior that are carried out by physical contacts, gestures, relational aggressions, or intentional exclusion from a peer group. They are attempted to inflict emotional distress on another student (Olweus, 1977).

People who consider harassment and bullying "a rite of passage" fail to recognize its many adverse consequences affecting youth's mental health and well-being (Birkett et al., 2009). Many studies show that bullying results in poor educational attainment, antisocial behavior, depression, and suicide ideation (Dresler-Hawke & Whitehead, 2009) for all parties involved, the perpetrator and the victim alike (Sterzing et al., 2014). To address bullying and harassment, many schools have implemented anti-bullying policies. However, only a few schools (10.1 %) have comprehensive policies that specifically define and prohibit bullying based on sexual orientation or gender identity (Kim et al., 2009; Kosciw et al., 2014). Anti-bullying policies that do not specifically enumerate sexual orientation and gender identity are not sufficient enough to offer protection against homophobic bullying (Kim et al., 2009).

The Gay, Lesbian, and Straight Education Network (GLSEN) has identified key components of a model anti-bullying policy to be adopted by public schools. The proposed model for a comprehensive anti-bullying policy is to include a clear and explicit definition of the term "bullying and harassment"; a clear and precise procedure for reporting and responding to any bullying incidents; and a description of the shared responsibilities of the educator and supporting staff in helping to create a safe learning environment free of verbal and physical harm (GLSEN, n.d.). In addition, it has been suggested that proper enumeration that includes race, religion, sex, disability, sexual orientation and gender identity/expression, should be utilized for an effective anti-bullying policy. Others have suggested that such policies should also entail language in respect to the association between bullying behavior and public health risks (Srabstein et al., 2008).

Negative Psychological and Social Outcomes

Research has consistently linked bullying and victimization in schools to adverse psychological and educational outcomes (Kosciw et al., 2014; Fedewa & Ahn, 2011; Espelage et al., 2008). Compared to heterosexual students, sexual minority youth are more than twice as likely to be bullied or harassed at school (Fedewa & Ahn, 2011). As such, they are at an increased risk for developing psychosocial problems (Marshal et al., 2011). Studies confirm this and indicate a clear disparity between LGBTQ and heterosexual youth in the rates of depression and suicide ideation (Kosciw et al., 2014; Meyer, 2003; Russell et al., 2011), alcohol and substance use (Brikett & Espelage, 2009; Espelage et al., 2008; Hatzenbuehler, 2011), and risky sexual behavior (Just the facts coalition, 2008; Rice et al., 2013).

The prevalence of depression and suicide ideation among LGBTQ students stresses the severity of the disparity (Marshal et al., 2011). In a meta-analysis of suicide and depression,

Marshal et al. (2011) demonstrated an average of 28% of sexual minority youth reporting suicide ideation as compared to 12% of heterosexual youth. After controlling for other variables, the same study concluded that sexual minority adolescents were still twice as likely to report thoughts of suicide. However, LGBTQ students who receive family and school support have continuously reported significantly lower depression and suicidal thoughts than students who live in unsupportive environments (Espelage et al., 2008; Hatzenbuehler, 2011).

Gay-Straight Alliance

Gay-Straight Alliances (GSA) are intended to provide a safe and positive environment for sexual minority students and their allies to socialize, offer support, and to engage in advocacy for equality (Kim et al., 2009; Kosciw et al., 2014; Poteat et al., 2012). Students report that having a GSA at school improves their subjective sense of belonging and community in the schools (Poteat, 2012; Walls, 2010). The National School Climate Survey (NSCS) conducted by GLSEN report students in schools with a GSA club experienced less physical bullying and victimization (19.0% in comparison to 36.2), heard less homophobic epithets, and missed fewer days of school (Kosciw et al., 2014). Furthermore, due to the fact that GSA requires the support of at least one faculty advisor, the presence of such clubs afford the sexual minority students a venue for seeking emotional support from an adult ally in school (Kosciw et al., 2014). Studies demonstrate that supportive school faculty and staff as a resource are found to be positively correlated with the students' mental health and psychological well-being (Hackimer & Proctor, 2015).

Toomey et al. (2011) conducted a study to assess GSA clubs in schools and their association with sexual minority students' psychosocial well-being and educational attainment. Consistent with previous research findings, the study revealed a correlation between GSA

presence and improved psychosocial and academic outcomes among sexual minority youth (Toomey, et al., 2011). The study exhibited a negative association between GSA clubs and reported depression and substance use among LGBTQ students (Toomey et al., 2011). It is also noteworthy to mention that the presence of GSA was found to be a more striking predictor of student's psychosocial well-being and educational outcomes than membership and participation in the club (Toomey et al., 2011).

The Role of Faculty and Staff

The presence of adult supporters at school plays a critical role in the lives of many LGBTQ students. An adult ally in school improves students' general sense of safety (Kim et al., 2009), educational experience, and academic attainment (Kosciw et al., 2014). As a transmitter of social norms and values, schools and faculties play a central role in how the students interpret and respond to their world (Dresler-Hawke & Whitehead, 2009). In a position statement regarding school counselors and LGBTQ students, the American School Counselor Association (ASCA) stressed the importance of the counselor's role in helping sexual minority youth deal with self and social acceptance (Just the Facts Coalition, 2008).

In addition to playing supportive roles, teachers and counselors also have the opportunity to cultivate a more inclusive and responsive school climate (Fredman et al., 2013 & Fisher et al., 2008). However, many feel uneasy about how the administration, families, and community would respond to their sensitivity towards sexual minorities (Fredman et al., 2013). Fredman et al. (2013) conducted a study assessing how educators navigate social and academic environments in order to promote safe educational environment for sexual minority students. Many educators who participated in the survey reported that they had been, either explicitly or

implicitly, instructed by the administration to avoid LGBTQ topics. As such, the educators found themselves in a constant struggle to assess their job security and the student welfare.

Studies also reveal that educators are not adequately trained to address LGBTQ related issues (Fredman et al., 2013). It is due to this inadequacy that sexual minority students often refrain from reporting incidences of bullying and harassment to the school personnel (Kosciw et al., 2014). The 2013 NSCS reports that sexual minority students are concerned about the ineffectiveness of bullying prevention practices and the staffs' reactions and insensitivity (Kosciw et al., 2014). Research reflects a need for continued training and education for faculty and staff in respect to LGBTQ students and their needs (Perez et al., 2013).

It is also important that faculty and staff are trained to recognize their own biases in how they perceive the seriousness of homophobic bullying and harassment (Perez et al., 2013). Bullying and harassment intervention and prevention can only be achieved with a supportive presence at schools. Lack of supportive presence at school perpetuates "a culture of compulsory heterosexuality" and "stigmatization of homosexuality" (Mayberry et al., 2011). Therefore, district-wide training on LGBTQ students' safety and issues, plays a crucial role in raising awareness among staff and faculty (Kim et al., 2009). This is achieved by providing school staff with the thorough guidance needed for appropriate intervention and prevention as well as a systematic and effective response to bullying, harassment, and assault based on sexual orientation and gender identity (Kosciw et al., 2014).

School Curriculum

Research shows a positive correlation between improved learning environment and LGBTQ inclusive curriculum (Snapp, et al., 2015). Inclusion of positive LGBTQ-related events, histories, and movements in the curriculum not only fosters a sense of self-worth and value in

LGBTQ students but also helps reduce the effect of stigma associated with LGBTQ communities (Kosciw et al., 2014). As a result, students report better representation in the classroom, more connection to the school, and a general sense of improved school climate (Snapp et al., 2015). However, the majority of American public schools do not include LGBTQ related materials and references in their program (Kim et al., 2009). Many policies and practices are in place to keep positive sexual minority representation away from classroom (Kosciw et al., 2014). According to the 2013 NSCS, only about a third (31.6%) of the participating students reported having LGBTQ topics discussed in their classroom, of which, nearly half (14.8%) reported the content to be of negative nature (Kosciw et al., 2014).

Legal and Ethical Issues

Federally funded public schools are under a legal and ethical obligation to provide students with safe and positive educational environment that is conducive to learning (No Child Left Behind Act, 2001). The Codes of Ethics set forth by U.S. Department of Education Office for Civil Right (DOE) explicitly state that educators and support staff are responsible to ensure all students, including sexual minority students, are provided with equal access and opportunity to learn in a safe, healthy, and positive educational environment (DOE, 2001). As a result of Supreme Court cases linked to sexual harassment in schools, the U.S. Department of Education Office for Civil Rights has issued a revised guidance that is to be used as a replacement for the 1997 Sexual Harassment Guidance. The revised document (DOE, 2001) specifically states that "it can be discrimination on the basis of sex to harass a student on the basis of the victim's failure to conform to stereotyped notions of masculinity and femininity" (p. v). It further states that "gender-based harassment, which may include acts of verbal, nonverbal, or physical

aggression, intimidation, or hostility based on sex or sex-stereotyping . . . is also a form of sex discrimination to which a school must respond . . . "(p. 3).

The U.S. Department of Education Office for Civil Right issued a statement on October 26, 2010 that states "Title IX prohibits sexual harassment and gender-based harassment of all students, regardless of the actual or perceived sexual orientation or gender identity of the harasser or target" (Ali, 2010, p. 7-8). Further, "harassment based on the target's actual or perceived sexual orientation does not relieve a school of its obligation under Title IX to investigate and remedy overlapping sexual harassment or gender-based harassment" (p. 8). At a minimum, educators and education support staff need to be knowledgeable of their Codes of Ethics and adhere to their Professional Codes of Conducts set forth by the aforementioned agencies. Codes of Ethics and Codes of Professional Conducts have been implemented to ensure educators and education support staff respect the rights of all students to self-actualization and self-identity in a safe, healthy, and positive school environment (Jacob, 2013). Leading professional organizations, such as The National Education Association (NEA), The American School Counselor Association (ASCA), and The National Association of School Psychologists (NASP), have also implemented guidelines consistent with the policies set forth by the U.S. Department of Education (NEA, 2010; ASCA, 2010; & NASP, 2010).

CHAPTER 3. METHODS

The present meta-analysis aims to explore: the prevalence of peer victimization and adverse outcomes among sexual minority students; the relationship between peer victimization and negative outcomes; and the moderating effects of supportive school climate on peer victimization and adverse outcomes among sexual minority students. It is the purpose of this chapter to discuss the elements involved in the process of conducting the meta-analysis including methods used for article selection, extracting and coding relevant data, and calculating effect size estimates.

Search Strategy and Criteria for Eligibility

Systematic online searches of electronic databases including SocINDEX, CINAHL Complete, PsycInfo and MasterFILE were performed to identify eligible peer viewed studies that were published in English, between years of 2005 and 2016. The key terms for literature search included “lgb*”, “lesbian”, "sexual minorit*”, “school”, “bull*”, “harass*”, “discrimi*”, "school climate", “GSA”, “homoph*” “educat*”, “counsel*”, “discrimin*”, “inclusion”, “depress*”, “mental”, “psyc*”, and “suicid*”. After the removal of the duplicate references, the search produced 1,539 distinct articles. The retrieved studies were screened using the following inclusion criteria for eligibility in the present meta-analysis:

- Target population of school age adolescents no older than 21,
- Sexual orientation as the predictor variable,
- Availability of statistical data for effect size calculation,
- U.S. based samples,
- Outcomes comparison between heterosexual and sexual minority students (applicable to the first two research questions only).

A total of 16 eligible studies were retrieved for coding (see Figure 1).

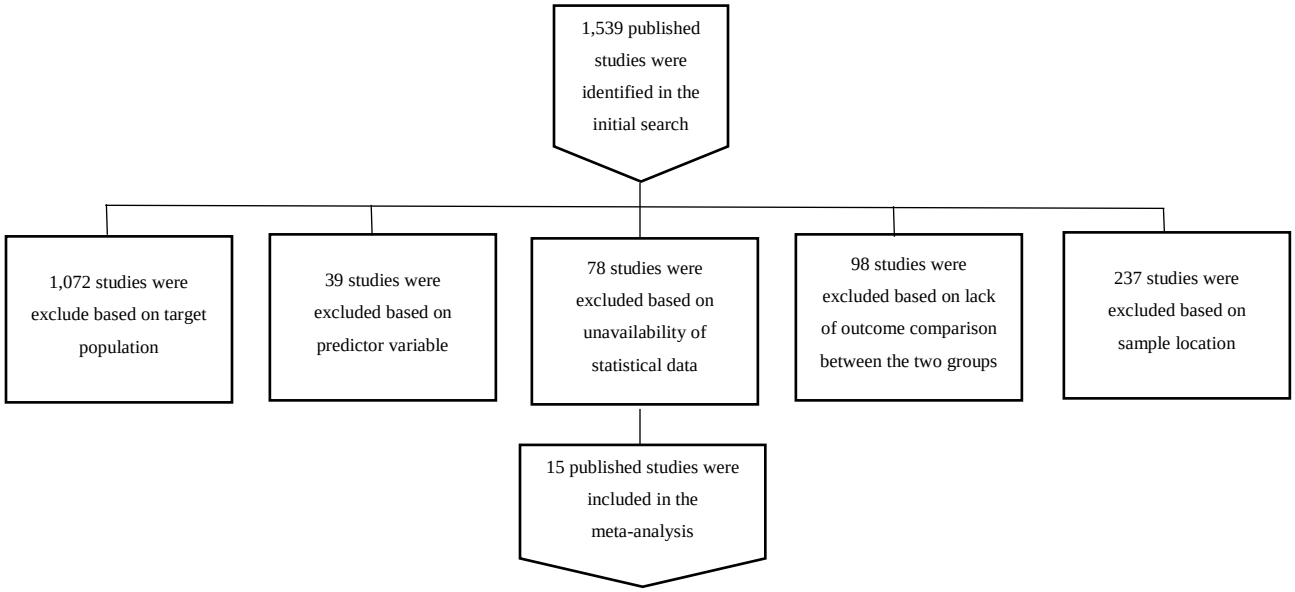

Figure 1: Flowchart illustration of excluded studies based on inclusion criteria

Table 1 *Studies used in reviewing the literature*

Author (s) Year of publication	Purpose of the study	Study characteristics	Results of the study
Birkett et al 2009	Investigated how school climate and homophobic teasing affect truancy, drug use, depression, and suicide ideation among students	Dane County Youth Assessment survey N=11,200 Grades: 7-8	Sexually questioning students were found to be significantly more susceptible to homophobic teasing and peer victimization than LGB and heterosexual students. LGB students were more likely than heterosexuals to experience homophobic teasing and peer victimization. Compared to LGB and heterosexual students, sexually questioning students reported significantly higher rate of depression, suicide ideation, drug use, and truancy. Likewise, compared to heterosexual students, LGB youth exhibited higher rates of aforementioned outcomes.
Black, Fedewa, & Gonzalez 2012	Investigated the positive effects of safe school policies and programs in regards to their effectiveness in improving physical, social, and mental health outcomes for sexual-minority adolescents	Review of literature N= 17 articles	Students who attended schools that implemented safe school policies and programs were much more likely to experience positive psychological outcomes. Heterosexism was more visible in schools that did not have inclusive harassment and non-discrimination policies or programs designed to counteract hostility. Students who attended schools that implemented safe school policies and programs were much more likely to experience positive psychological outcomes. GSA played a significant role in improving the psychological functioning of LGBT youth and were strongly related to school climate. Intervention in harassment is an important factor in students feeling safer in school. A more supportive environment via GSAs or anti-bullying and anti-discrimination policies was significantly associated with fewer suicide attempts. Psychologists and school professionals should promote inclusivity and act as advocates for students who are in need of support and who experience hostile school environments.
Dresler-Hawke & Whitehead 2009	Proposed an awareness programs and subsequent anti-bullying intervention strategies to be applied to schools, using Behavioral Ecological Model as a health promotion framework	Adopted a Behavioral Ecological Model as a framework	At the individual level: Development of a ‘‘Parent Anti-Bullying Awareness’’ program with multiple objectives to offer advice on how to address issues relating to harassment and bullying to promote a safe school environment At the local level: Implementation of a comprehensive school-wide anti-bullying policy program that is integrated with local and national curriculum and school’s discipline policies At the community level: Increase funding for education and social marketing campaigns on bullying At the social and cultural level: Establishment of a national anti-bullying law and training for teachers and school administrators in bullying recognition, prevention, and intervention
Espelage, Aragon, & Birkett 2008	Examined buffering influences of positive parental relations and positive school climate on mental health outcomes for high school students who are questioning their sexual orientation	Dane County Youth Assessment survey N=13,921 Mean age: 15.8 Midwestern U.S. public school district	Sexual minority youth were more likely to report high levels of depression, suicide ideation, and alcohol-marijuana use. Students who were questioning their sexual orientation reported more teasing, greater drug use, and more feelings of depression and suicide ideation than either heterosexual or LGB students. Sexually questioning students who experienced homophobic teasing were more likely than LGB students to use drugs-alcohol and rate their school climate as negative. Positive school climate and parental support protected LGB and questioning students against depression and drug use.
Fedewa & Ahn 2011	Examined the relationship between bullying, peer victimization,	Quantitative synthesis of literature	Compared to youths who identify as heterosexual, sexual-minority youths were 2.24 times more likely to be bullied and 1.82 times more likely to be victimized.

	and GLB physical, social, and mental health outcomes	N=18 studies and 81 effect sizes	Compared to heterosexual youths, sexual-minority youths were much more likely to lack the support of family, friends, and school staff. These hostile experiences contribute to a number of negative outcomes for sexual minority youth.
Fisher, Komosa-Hawkins, Saldana, Thomas, et al. 2008	Discussed challenges faced by LGBTQ students and presented methods for responding to the needs of the sexual minority youth using the public health framework	Adopted a public health framework that focuses on primary, secondary, and tertiary levels of prevention and intervention	Primary level: Policy development, educating teachers and students about diversity (including gender and sexual diversity), and integrating diversity into the curriculum Secondary level: Ongoing support for students who are at risk of experiencing problems and can take the form of a diversity room that serves all students, groups to support LGBTQ students and allies, and group counseling to promote identity development and coping skills Tertiary level: Focusing on those students who are already experiencing problems and include individual counseling services.
Fredman, Shultz, & Hoffman 2013	Examined how educators navigate social and academic environments in order to promote and cultivate safe schools for sexual minority students	Qualitative research methods Semi-structured interviews Snowball sampling method N=16 Ages 31-57	Educators report had they had either explicitly or implicitly instructed to avoid discussing LGBTQ topics. They questioned their competence and training to address LGBTQ related issues and topics effectively. Educators report that schools support heteronormativity by creating rules that depict LGBTQ topics as controversial. The educators also expressed concern about how their actions and stances will impact their job securities.
Hackimer & Proctor 2015	Investigated relationship between the existence of GSAs in schools and the greater community where the schools are located	Literature review	Regions that were traditionally more LGBT-friendly (i.e., West and Northeast) were more likely to have schools with GSAs, while those that were historically more hostile toward LGBT individuals (i.e., South and Midwest) did not have as many GSAs. Students who lived in urban or suburban communities and in a region of the country with a more liberal political climate were more likely to start a GSA in their school than those students in rural areas, small towns, or conservative regions.
Hatzenbuehler 2011	Examined the social environment surrounding lesbian, gay, and bisexual youth may contribute to their higher rates of suicide attempts, controlling for individual-level risk factors	The Oregon Healthy Teens study Oregon N=31,852 Grade: 11th	Compared with heterosexual youth, sexual minority youth were significantly more likely to attempt suicide in the previous 12 months (21.5% vs 4.2%). Among lesbian, gay, and bisexual youth, the risk of attempting suicide was 20% greater in unsupportive environments compared to supportive environments. A more supportive social environment was significantly associated with fewer suicide attempts, controlling for sociodemographic variables and multiple risk factors for suicide attempts, including depressive symptoms, binge drinking, peer victimization, and physical abuse by an adult.
Kim, Sheridan, & Holeomb 2009	2008 National Education Association summit on gay, lesbian, bisexual, and transgender (GLBT) issues in education to assess the status of GLBT students in the United States educational system and to make recommendations on improving the learning conditions and academic achievement of GLBT youth	Discussions provided by leading researchers, scholars, and practitioners	Hostility and apprehension toward homosexuality and gender nonconformity continue to plague GLBT youth and adults in schools in every region of the nation, even as signs of greater inclusion and acceptance appear in some areas. Students of all sexual orientations, genders, and racial or ethnic backgrounds are directly victimized and impacted by homophobic acts. Sexual minority students from poor and rural communities are acutely disadvantaged in obtaining resources, finding allies, and integrating into school culture. The intense bullying and harassment GLBT students experience have led in some cases to declining academic performance and increased truancy and dropouts. An alarming number of school personnel ignore homophobic bullying when they witness it. The presence of student-led organizations such as GSAs has a positive impact on the school climate for both school personnel and students, regardless of whether they attend GSA meetings or events.

Kosciw, Greytak, Palmer, & Boesen 2014	Examined the unique challenges sexual minority youth faces and identifies interventions to improve school climate. Examines school policies and practices that contribute to negative experience of sexual minority students	Biennial survey Primary data National sample N=7,898 Grades: 6-12	More than half of sexual minority students felt unsafe at school because of their sexual orientation. Prevalence of anti-gay remarks resulted in 90.8% of sexual minority youth feeling distressed. 74.1% were verbally and 36.2% were physically harassed. 55.5% experienced discrimination based on school policies and practices. Sexual minority students were more likely to miss school and have lower grades than their heterosexual cohorts. Sexual minority students were at an increased risk to develop depression and low self-esteem. Only half the school had GSA presence. Only 18.5% were taught positive representations about sexual minority people in class.
Marshal, Dietz, Friedman, Stall, Smith, et al. 2011	Examined suicide ideation and depression disparities between sexual minority youth and their heterosexual cohorts	Meta-analysis N=20 suicidality studies ES=122 corresponding effect size estimates	Sexual minority youth experience significantly higher levels of depressive symptoms and suicide ideation than their heterosexual cohorts. After controlling for confounding variables, sexual minority youth were still twice as likely to report suicide ideation. Sexual minority youth reported higher rates of substance use and abuse, victimization, and violence than heterosexual youth. Bisexuality was found to be a significant moderator with almost five times more likely to have suicide ideation than heterosexual youth.
Mayberry, Chenneville, & Currie 2011	Investigated school practices that hinder or help GSA pursue reform efforts in schools, regarding challenging homophobic and heterosexist practices embedded in school cultures	Qualitative case study of four high schools Semi-structured conversational interview Progress County, Southeast U.S. N=12 GSA members, 4 GSA advisors, 2 principals, and 2 district administrators	Faculty members' failure to respond to antigay comments supports the stigmatization of homosexuality. Presence of GSA creates much needed physical and emotional support for the sexual minority youth giving them a sense of community. The bestowed sense of community helps students to speak out against derogatory comments, bullying, and harassments. Parental resistance is reported to play a major role in hindering GSA's efforts to be more proactive in the larger school community.
Meyer 2003	Investigated whether sexual minority individuals have a higher prevalence of mental disorder than heterosexuals	Meta-analysis	Sexual minority population have a higher prevalence of mental disorder than heterosexuals. The author explains the finding using minority stress as a conceptual framework. Stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems.
Olweus 1997	Investigated bullying in schools and developed a school-based intervention program against bullying. The effects of the developed program were evaluated in 42 schools over a period of two years	Primary data Bully/victim questionnaire N=130,000 students Norway	The developed anti-bullying program emphasized on the involvement from teachers and parents, firm limits to unacceptable behavior ("we don t accept bullying in our class/school"), and consistent use of non-hostile non-corporal sanctions on rule violations. As a result of the program implementation: The frequency of bully/victim problems decreased by 50-70%. The prevalence of antisocial behavior in general, such as vandalism, theft, drunkenness and truancy, showed a significant drop.
Perez, Schanding, & Dao 2013	Examined educators' perception of seriousness, their likelihood to intervene, and their level of empathy when victims are among sexual minority students	Online survey Primary data N=186 seasoned educators	Educators viewed physical bullying as the most serious form of bullying, followed by verbal then relational bullying involving heterosexual victims. Educators reported physical bullying less serious than verbal and relational bullying when involving sexual minority youth. As such they reported less empathy and less likelihood of intervention in physical bullying of sexual minority students.
Poteat & Espelage 2005	Investigated the relationship between bullying behavior and homophobic epithets	Primary data Survey	Strong association between homophobic epithets and bullying behavior. Males engaged in homophobic teasing more often than females.

		N=191 students Grade: 8th	Homophobic epithets were not directed exclusively at LGBTQ students. Targeted population were also bullying victims. Homophobic epithets was highly associated with relational aggression.
Poteat, Sinclair, DiGiovanni, Koenig, & Russell 2012	Investigated how presence of GSA at school is related to the health and well-being of sexual minority students	Dane County Youth Assessment partially modeled from the Youth Risk Behavior Survey N= 15,965 students Ages: 10-18	Sexual minority as well as heterosexual students reported lower truancy, smoking, drinking, suicide attempts, and sexual behavior with casual partners in schools that had a GSA presence. The impact of GSA presence was reported to be more pronounced for sexual minority than heterosexual students.
Rice, Barman-Adhikari, Rhoades, Winetrobe, Fulginiti, et al. 2013	Investigated homelessness and risky sexual behavior in respect to sexual orientation	Supplemental survey to the Youth Risk Behavior Survey (YRBS) Los Angeles, California N= 1,839 Grades: 9-12	Relative to heterosexual youth, sexual minority youth experiences higher rate of homelessness. The homeless sexual minority and African American adolescents are more likely to stay with strangers than in the shelter. Compared to adolescents who stayed in shelters, adolescents who stayed with strangers are more likely to engage in risky sexual behaviors.
Russell, Ryan, Toomey, Diaz, & Sanchez 2011	Examined the association between reports of LGBT school victimization and young adult psychosocial health and risk behavior	Survey Primary data Convenience sample N=245 Ages: 21-25 California	Young adult mental health and social adjustment is strongly associated with adolescent LGBT related school victimization. LGBT young adults who reported high victimization during adolescence were 2.6 times more likely to report depression and 5.6 times more likely to report suicide attempts. Even modest reduction in LGBT school victimization, experienced in middle and high school, would result in significant long-term health gains for the sexual minority young adults.
Snapp, Burdge, Licona, Moody, & Russell 2015	An assessment of student's perspective of LGBTQ-inclusive curriculum	Qualitative grounded theory method Telephone interview of focus group Secondary data California N=26 high school students, recruited by GSA	Study revealed that LGBTQ-inclusive curriculum were present mostly in social sciences and humanities courses. Sexual minority students reported LGBTQ related discussion in the classrooms that were positive fostered a more supportive school climate.
Srabstein, Berkman, & Pyntikova 2008	Examined anti-bullying policies in schools to determine the extent they reflect aspects of basic public health anti-bullying policies such as providing a clear definition of bullying behavior and its associated health risks, specifically prohibiting bullying, and requiring implementation of prevention programs	A review of state statues regarding school bullying and harassment enacted in U.S. from 1944 through June of 2007	As of June 2007: 25 states have defined bullying, harassment, and intimidation 21 states have recognized the link between bullying and serious adverse health effects 23 states have language in their policies to specifically prohibit bullying and harassment behavior Only 16 states have enacted policies that incorporate comprehensive basic public health anti-bullying principles
Sterzing, Auslander, & Goldbach 2014	Examined the frequency of four types of bullying involvement roles (bully-only, victim-only, bully-victim, no involvement) in respect to the sexual minority youth and their social ecological factors	Convenience sample Face-to-face survey of sexual minority youth Primary data Midwest N=125 Age: 15-19	The most common bullying involvement of the sexual minority youth is the victim-only type (46.4%), followed by no involvement (36.8%). It was reported that 4.8% of sexual minority youth were involved in bully-only and 12% were involved in bully-victim type.

Toomey et al. 2011	Assessed the GSA clubs in schools and their association with sexual minority students' psychosocial well-being and educational attainment	Primary data Retrospective survey N=245 LGBT young adults Ages: 21-25 San Francisco Bay Area	GSA was positively associated with college-level educational attainment and negatively associated with depression and problems related to substance abuse GSA participation buffered the direct association between LGBT school victimization on lifetime suicide attempts Presence of a GSA seems to be a more salient predictor of well-being than GSA membership
Walls, Kane, Wisenski 2010	Investigated the impact of Gay-Straight Alliances (GSA) on sexual minority student's school experience	Convenience sample Online survey modeled after National Youth Risk Behavior Surveillance Survey, solicited to the sexual minority youth who use youth services offered by Rainbow Alley Primary data Colorado N=293 Age: 13-22	Presence of GSA promotes positive school experience for sexual minority youth. This is regardless of whether or not the sexual minority youth is an actual participating member of the club.

Coding of Studies

Studies were coded to retrieve relevant qualitative and quantitative information necessary for effect size computation and moderating variables. Data were examined multiple times by the same coder. Discrepancies were evaluated and resolved in order to reach 100% agreement across all studies. Articles were coded for study characteristics (including data source, sample geographic location, publication year) and sample characteristics (including gender, sexual orientation, age and grade level, race and ethnicity, and sample size). Studies were also coded for relevant variables including: school victimization (bullying, peer victimization, homophobic teasing, and sexual harassment); psychological outcome (self-harm, suicide ideation/plan, depression, and internalization of problems); and educational outcome (truancy, lower GPA, no plans of attending 4-year college, probability of not finishing high school). Due to its serious nature, actual suicide attempt was considered distinct construct from suicide ideation/plan. Positive school climate was operationalized by presence of GSA or safe spaces, supportive curricular inclusion, supportive staff and faculty, comprehensive and enumerated anti-harassment policies, and trained faculty and staff in respect to sexual minority issues. Negative school climate was associated with students' subjective perception of school connectedness.

For the purposes of the present meta-analysis:

- Subgroups of female and male within the same study were treated as two independent samples
- Subgroups of gay, lesbian, bisexual, transgender, and questioning within the same study were combined and treated as "sexual minority". For the purposes of analysis, the mean average of the effect sizes across all sexual minority subgroups was calculated and used as the unit of analysis.

- Sexual orientation was operationalized as self-reported gay, lesbian, bisexual, transgender, straight, or non-transgender heterosexual
- If mean age was not provided by the article, it was either calculated (using the age range), or estimated (adding 5 to the grade level: 8th grader estimated age = 13)
- Sample size included number of students who provided usable data

The present study assumed that sexual minority subgroups of gay, lesbian, bisexual, transgender, and questioning are similar to each other. Thus, the within-group differences among sexual minorities was not examined in the present study. The study focused on the differences between heterosexual students and sexual minority students as a whole. Of the 15 eligible studies, 5 (Almeida, 2009; Birkett, 2014; Eisenberg, 2006 & 2016; & Mitchell, 2013) provided independent statistics for female and males, which were treated as separate and independent samples.

Effect Sizes

Unlike fixed-effects model that suggest one true effect size across all studies, a random-effects model assumes that effect sizes vary across studies. It considers heterogeneity and variances between the studies, as well as variances within the studies, such as random errors or chance (Borenstein, 2009). The articles selected for the present study vary in design and methodology. They might have also been influenced by additional number of uncontrolled dynamics, such as sampling. As such, to address the school climate and the well-being of sexual minority students, random-effects model was employed. The overall effect size was estimated by calculating the mean of the distribution of study effects.

To investigate the first two research questions, odds ratio (OR) with 95% confidence interval (CI) was used to compare the frequency of an outcome variable (i.e. depression, truancy,

suicidality) between heterosexual students and their sexual minority cohorts. Combined effect size was considered for independent sexual minority subgroups (i.e. gay, lesbian, and bisexual). The odds ratio for each study was either directly extracted or calculated using the Comprehensive Meta-Analysis (CMA) software. The weighted average of effect sizes was used for analysis purposes. To address the last three research questions and investigate the relationship between two continuous variables, correlation coefficient with 95% CI for each study was either extracted or calculated using CMA. Correlation coefficients were transformed into Fisher's *z* to calculate a weighted average of raw correlations (Borenstein, 2009). This step was taken to correct for any possible skewedness of distribution of the correlations due to sample size. Once the summary effect and its associated confidence intervals were calculated, the results were converted back to correlation coefficients for analysis and discussion.

Multiple Outcomes

The articles used in the present meta-analysis include studies that reported multiple outcome variables for the same sample of population. This could create overlapping information among study outcomes, thus, assumption of independence would unlikely to be correct. One approach to reduce the dependency would be to conduct a separate meta-analysis for each outcome variable. However, the number of available studies for each outcome variable used in the present meta-analysis was too small to yield a meaningful summary effect. Therefore, to address the issue of dependent information, a composite score of similar outcomes within each study was computed and used as one unit of analysis. As such, combined school victimization outcome included homophobic teasing, peer victimization, and bullying/sexual harassment; combined adverse psychological and physical health outcome included depression, mental health, internalization of problems, alcohol/marijuana/substance use, physical health, suicide

ideation, and low self-esteem; and combined educational outcome included truancy, lower GPA, expectation of finishing high school/attending 4-yr college. Due to their serious nature, planned and attempted suicide along with self-harm were constructed separate from adverse psychological outcome (see Table 4).

At the time of the present meta-analysis, CMA presented a limitation in respect to the range of assumed correlation between the dependent outcome variables. The correlation was to be set only at the extremes of the possible ranges, either at “0” assuming independence or “1” assuming dependence. This limitation poses the issue of under and overestimation of variance and precision. Correlation at “0” underestimates the variance and overestimates the precision whereas correlation at “1” overestimates the variance and underestimates the precision.

CHAPTER 4. RESULTS

A total of 20 independent samples from 15 eligible studies yielded 88 effect sizes to be used in the present meta-analysis. Effect sizes include 48 odds ratios (see Table 2) and 40 correlation coefficients (see Table 3). The eligible studies provided a total of 278,409 student participants, ranging from N = 293 to N = 55,958 (*M* = 13,920; *SD* = 15,834). Sexual minority students represented 11.31% (N = 31,475; *M* = 1,574; *SD* = 1,465) whereas heterosexual students represented 88.69% (N = 246,934; *M* = 12,347; *SD* = 15,062) of the total subjects. The age of the participants ranged from 12 to 21 (*M* = 15.46; *SD* = .51).

Publication Bias

Publication bias occurs when studies that produce significant effect sizes are more likely to get published than studies with lower statistical significance (Borenstein et al., 2009). The concern with publication bias stems from the notion that the published articles may collectively produce an overrepresentation of the desired effect sizes, and might not be a true representation of the population studied (Card, 2012). The present study included only peer-reviewed published studies thus it might be subject to publication bias. Visual inspection of the scatter plot of effect size against standard error did not seem symmetric and was not funnel-shaped. However, evidence of asymmetry does not always translate into publication bias. In addition, the funnel-plot asymmetry becomes less meaningful when there is an insufficient number of articles, as was the case in the present study (Loannidis & Trikalinos, 2007). Statistical tests are used to identify and quantify the asymmetry. The classic fail-safe N test suggested that an additional 3,834 studies, with an effect size of “0”, would be needed in order to make the combined effect size statistically insignificant.

Table 2: *Studies used in comparing outcome variables between sexual minority and heterosexual students*

Study			Sample								Variables		
First Author Yr.	Sample location	Data Source	Sex	Age	Age M	Grade	Race	N	LGB TQ	Hetero	Predictor	Outcome	Odds Ratio*
Almeida 2009-1	Boston, MA	2006 Random Paper-and-pencil Boston Youth Survey Instrument	F	13-19	16.3	9-12	Mixed	509	79	430	Perceived discrimination based on sexual orientation	Self-harm Suicidal ideation Depression	2.17 5.38 ***1.740***
Almeida 2009-2	Boston, MA	2006 Random Paper-and-pencil Boston Youth Survey Instrument	M	13-19	16.3	9-12	Mixed	354	24	330	Perceived discrimination based on sexual orientation	Self-harm Suicidal ideation Depression	20.26 10.67 ***2.323***
Aragon 2014	Dane County, WI	2009 Anonymous survey conducted in computer labs Dane County Youth Assessment	FM	14-17	15.5	9-12	Mixed	11,447	683	10,764	Sexual orientation	Truancy Lower GPA Expectation of not finishing high school Expectation of attending four-year college	2.330 ***2.224*** 2.530 0.630
Birkett 2009	Dane County, WI	2005 Dane County Youth Assessment Survey	FM	12-13	12.5	7-8	Mixed	6,457	1,078	5,379	Sexual orientation	Homophobic teasing Peer victimization Depression/suicidality Alcohol/marijuana Truancy Positive school climate	***3.030*** ***1.993*** ***2.245*** ***3.168*** ***3.090*** ***0.808***
Birkett 2014-1	Boston, Chicago, New York City, San Francisco	2005 & 2007 Self-reported YRBS Survey	F	14-17	15.5	9-12	Mixed	29,169	2,622	26,547	Sexual orientation	Truancy Lower GPA	2.283 2.300
Birkett 2014-2	Boston, Chicago, New York City, San Francisco	2005 & 2007 Self-reported YRBS Survey	M	14-17	15.5	9-12	Mixed	27,820	1,542	26,278	Sexual orientation	Truancy Lower GPA	3.093 1.527
Eisenberg 2006-1	MN	2004 Minnesota Student Survey	F	14-17	15.5	9 & 12	Mixed	11,255	803	10,452	Sexual orientation	Suicide ideation Suicide attempt	1.92 2.63
Eisenberg 2006-2	MN	2004 Minnesota Student Survey	M	14-17	15.5	9 & 12	Mixed	10,672	1,452	9,220	Sexual orientation	Suicide ideation Suicide attempt	1.60 2.49

Eisenberg 2016-1	MN	2013The Minnesota Student Survey	F	14-16	15	9 & 11	Mixed	38,606	3,057	35,549	Sexual orientation	Internalization of problems Self-harm Suicidal ideation Suicide attempt	3.553 4.957 4.350 4.707
Eisenberg 2016-2	MN	2013The Minnesota Student Survey	M	14-16	15	9 & 11	Mixed	38,105	1,939	36,166	Sexual orientation	Internalization of problems Self-harm Suicidal ideation Suicide attempt	3.340 5.040 4.280 5.670
Espelage 2008	Dane County, WI	2000 Exploratory factor analysis Dane County Youth Assessment Survey	FM	14-17	15.5	9-12	Mixed	13,921	1,997	11,924	Sexual orientation	Homophobic teasing Peer victimization Depression/suicidality Alcohol/Marijuana Positive school climate	***3.295*** ***2.000*** ***2.109*** ***1.952*** ***0.663***
Gruber 2008	New England	Primary paper and pencil survey	FM	13-17	15	7-12	Mixed	516	46	470	Sexual orientation	Self esteem Metal health Physical health Traumatic bullying/sexual harassment Substance abuse	***2.630*** ***5.073*** ***2.026*** ***2.529*** ***0.417***
Hatzenbuehler 2014	Chicago, DE, MA, ME, NY, San Francisco, VT, RI	2005 & 2007YRBS	FM	13-18	15.5	NR	Mixed	55,958	4,314	51,644	Sexual orientation	Suicidal ideation Suicide plan Suicide attempt	***3.293*** ***3.150*** ***4.010***
Mitchell 2013-1	United States	2010-2011 Teen Health and Technology	F	13-18	15.5	6-12	Mixed	2,870	1,005	1,865	Sexual orientation	Distressing sexual harassment	9.933
Mitchell 2013-2	United States	2010-2011 Teen Health and Technology	M	13-18	15.5	6-12	Mixed	2,269	772	1,497	Sexual orientation	Distressing sexual harassment	5.167
Ybarra 2014	United States	2010-2011 Teen Health and Technology	FM	13-18	15.5	5-12	Mixed	5,542	2,162	3,380	Sexual orientation	Suicide ideation	1.745

*Notes: * Heterosexual sample was treated as Ref (1.00) for OR analysis; Bold and italicized numbers are calculated using CMA software*
LGBTQ=lesbian, gay, bisexual; questioning; FM=female and male; NR=not reported

Table 3: *Studies used in investigating interaction effects of predictor variables and sexual orientation on outcome variables*

Study			Sample								Variables		
First Author Year	Sample location	Data Source	Sex	Age	Age M	Grade	Race	N	LGB TQ	Hetero	Predictor	Outcome	r
Doung 2014	New York, NY	2009 NYC YRBS	FM	14-17	15.5	9-12	Mixed	951	951	0	Bullying	(+) Suicide attempt (+)Suicide attempt resulting in injury	.291 .368
Eisenburg 2006-1	MN	2004 Minnesota Student Survey	F	14-17	15.5	9 & 12	Mixed	11,255	803	10,452	Safe school	(-) Suicide ideation (-) Suicide attempts	-.051 -.086
Eisenburg 2006-2	MN	2004 Minnesota Student Survey	M	14-17	15.5	9 & 12	Mixed	10,672	1,452	9,220	Safe school	(-) Suicide ideation (-) Suicide attempts	-.051 -.098
Gruber 2008	New England	Primary paper and pencil survey	FM	13-17	15	7-12	Mixed	516	46	470	Bullying	(+) Self-esteem (+) Mental health (+) Physical health (+) Trauma symptoms (+) Substance abuse	.137 .205 .226 .190 .134
											Sexual harassment	(+) Self esteem (+) Metal health (+) Physical health (+) Trauma symptoms (+) Substance abuse	.154 .269 .299 .325 .187
Kosciw 2012	United States	2009 Online and paper-pencil survey	FM	13-21	17	K-12	Mixed	5,730	5,730	0	School support	(-) Victimization (+) Self-esteem (+) GPA (-) Missed school days	-.280 .140 .060 -.080
											Victimization	(-) Self-esteem (-) GPA (+) Missed school days	-.240 -.130 .460
											Inclusive curriculum	(-) Victimization (+) GPA	-.050 .080
											GSA Policy	(-) Victimization (+) Self-esteem	-.040 .060
Poteat 2012	Dane County, WI	2009 Dane County Youth Assessment	FM	10-18	14.87	7-12	Mixed	15,965	926	15,039	GSA	(-) Truancy (-) Smoking (-) Drinking	-.080 -.260 -.350

												(-) Suicide ideation	-.030
												(-) Suicide attempt	-.031
												(-) Sex with casual partner	-.100
												(-) Homophobic victimization	-.040
												(-) General victimization	-.130
Walls 2010	CO	Online survey	FM	13-18	15.5	NR	Mixed	293	293	0	GSA	(-) Harassment	-.087
												(-) Felt unsafe	-.115
												(-) Missed school	-.165
												(-) Dropping out	-.192
Ybarra 2014	United States	2010-2011 Teen Health and Technology	FM	13-18	15.5	5-12	Mixed	5,542	2,162	3,380	Peer Victimization	(+) Suicide ideation	.130

Notes: LGBTQ=lesbian, gay, bisexual; questioning; FM=female and male; (-): reduced; (+): increased

Experiences of Sexual Minority Students

A total of 48 odds ratios were used to investigate whether there was a disparity between heterosexual and sexual minority students in experiences of school victimization (k =7); adverse psychological, physical, and educational outcomes (k = 31); and suicide plan/attempt (k = 10) (see Table 4).

Table 4: *Results from the odds ratio analysis for victimization and adverse outcomes among sexual minority students*

Source	*k*	OR	95% CI
School Victimization	**7**	**3.363**	**2.532 – 4.465**
Homophobic teasing	2	3.194	2.950 – 3.458
Peer victimization	2	1.998	1.863 – 2.142
Distressing bullying and harassment	3	5.095	2.170 – 11.963
Adverse Psychological and Physical Health Outcomes	**20**	**2.539**	**2.058 – 3.134**
Depression	2	1.871	1.282 – 2.729
Depression/suicide ideation	2	2.155	2.009 – 2.311
Suicide ideation	8	3.136	2.145 – 4.584
Internalization of problems	2	3.460	3.065 – 3.906
Alcohol/marijuana/substance use	3	1.542	0.899 - 2.643
Physical health	1	2.026	1.168 – 3.514
Mental health	1	5.073	2.903 – 8.863
Low self-esteem	1	2.630	1.514 – 4.570
Educational Outcomes	**11**	**1.519**	**0.875 – 2.639**
Truancy	4	2.700	2.230 – 3.268
Lower GPA	3	2.106	1.741 – 2.547
Expectation of finishing high school/attending 4-yr college	2	1.262	0.836 – 1.906
Perception of positive school climate	2	0.729	0.601 – 0.884
Suicide Plans	**10**	**3.792**	**2.796 – 5.142**
Planned suicide	1	3.150	2.517 – 3.942
Attempted suicide	5	3.636	2.687 – 4.920
Self-harm	4	5.032	3.582 – 7.070

School victimization. A total of five studies yielded 7 odds ratios to investigate the disparity between heterosexual and sexual minority students in experiences of school victimization (see Figure 2). The estimated odds ratio and confidence intervals for school victimization among sexual minority students were found to be statistically significant on homophobic teasing (*k* = 2; *OR* = 3.194; 95% *CI* = 2.950 – 3.458), peer victimization (*k* = 2; *OR* = 1.998; 95% *CI* = 1.863 – 2.142), and distressing bullying and harassment (*k* = 3; *OR* = 5.095; 95% *CI* = 2.170 – 11.963) (see Table 4). The result clearly indicates that sexual minority students are at higher risk of becoming targets of homophobic teasing, peer victimization, and distressing bullying and harassment than their heterosexual counterparts.

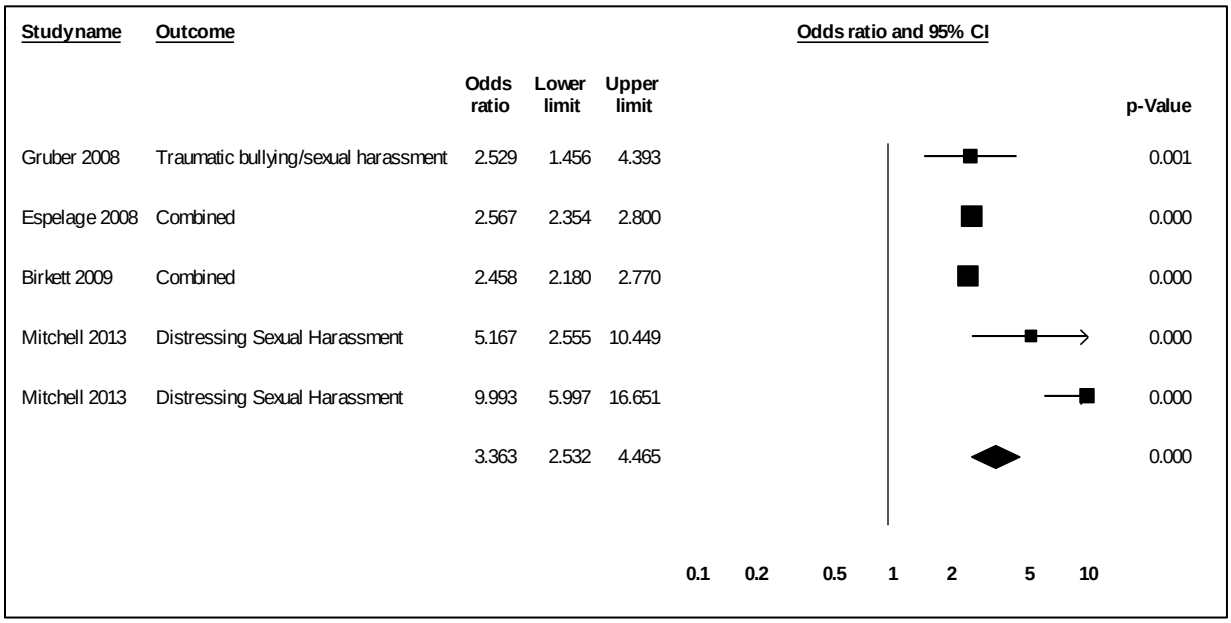

Figure 2: Random effects mean odds ratio and confidence intervals for school victimization among sexual minority students; Heterosexual sample was treated as Ref (1.00) for odds ratio analysis

Adverse psychological and physical health outcomes. A total of eleven studies yielded 20 odds ratios to investigate the disparity between heterosexual and sexual minority students in experiences of adverse psychological and physical health outcomes (see Figure 3). The estimated odds ratio and confidence intervals for adverse psychological and physical health outcomes among sexual minority students were found to be statistically significant on depression (k = 2; OR = 1.871; 95% CI = 1.282 – 2.729), depression/suicide ideation (k = 2; OR = 2.155; 95% CI = 2.009 – 2.311), suicide ideation (k = 8; OR = 3.136; 95% CI = 2.145 – 4.584), internalization of problems (k = 2; OR = 3.460; 95% CI = 3.065 – 3.906), physical health (k = 1; OR = 2.026; 95% CI = 1.168 – 3.514), mental health (k = 1; OR = 5.073; 95% CI = 2.903 – 8.863), low self-esteem (k = 1; OR = 2.630; 95% CI = 1.514 – 4.57) (see Table 4). The estimated odds ratio for alcohol/marijuana/substance use (k = 3; OR = 1.542; 95% CI = 0.899 – 2.643) reveals no statistically significant difference in alcohol/marijuana/substance use between sexual minority and heterosexual students (see Table 4). The results indicate that sexual minority students are at higher risk of for developing depression, depression/suicide ideation, internalization of problems, and physical and mental health. They are also more susceptible than their heterosexual counterparts to develop low self-esteem.

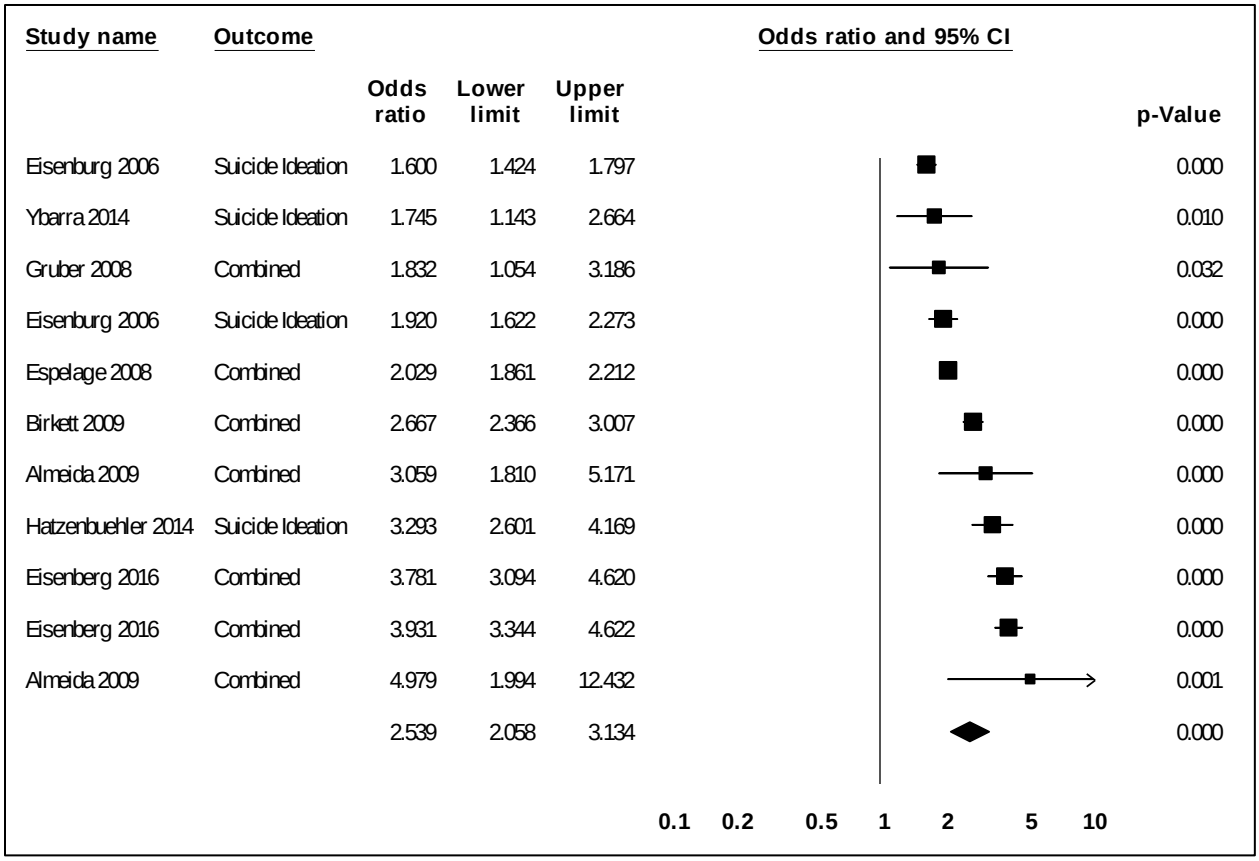

Figure 3: Random effects mean odds ratio and confidence intervals for adverse psychological and physical health outcomes among sexual minority students; Heterosexual sample was treated as Ref (1.00) for odds ratio analysis

Adverse educational outcomes. A total of five studies yielded 11 odds ratios to investigate the disparity between heterosexual and sexual minority students in experiences of adverse educational outcomes (see Figure 4). The estimated odds ratio and confidence intervals for educational outcomes among sexual minority students were found to be statistically significant on truancy (k = 4; OR = 2.700; 95% CI = 2.230 – 3.268) and lower GPA (k = 3; OR = 2.106; 95% CI = 1.741 – 2.547) (see Figure 4). Perception of positive school climate was also found to be statistically significant (k = 2; OR = 0.729; 95% CI = 0.601 – 0.884), indicating that compared to heterosexual students, LGBTQ youth perceive school as less positive and supportive (see Table 4). Expectation of finishing high school or attending a 4-yr college (k = 2; OR = 1.262; 95% CI = 1.741 – 2.547), however, was found to be not statistically significant, indicating no difference between sexual minority and heterosexual students in terms of whether to finish high school or attend a 4-yr college (see Table 4).

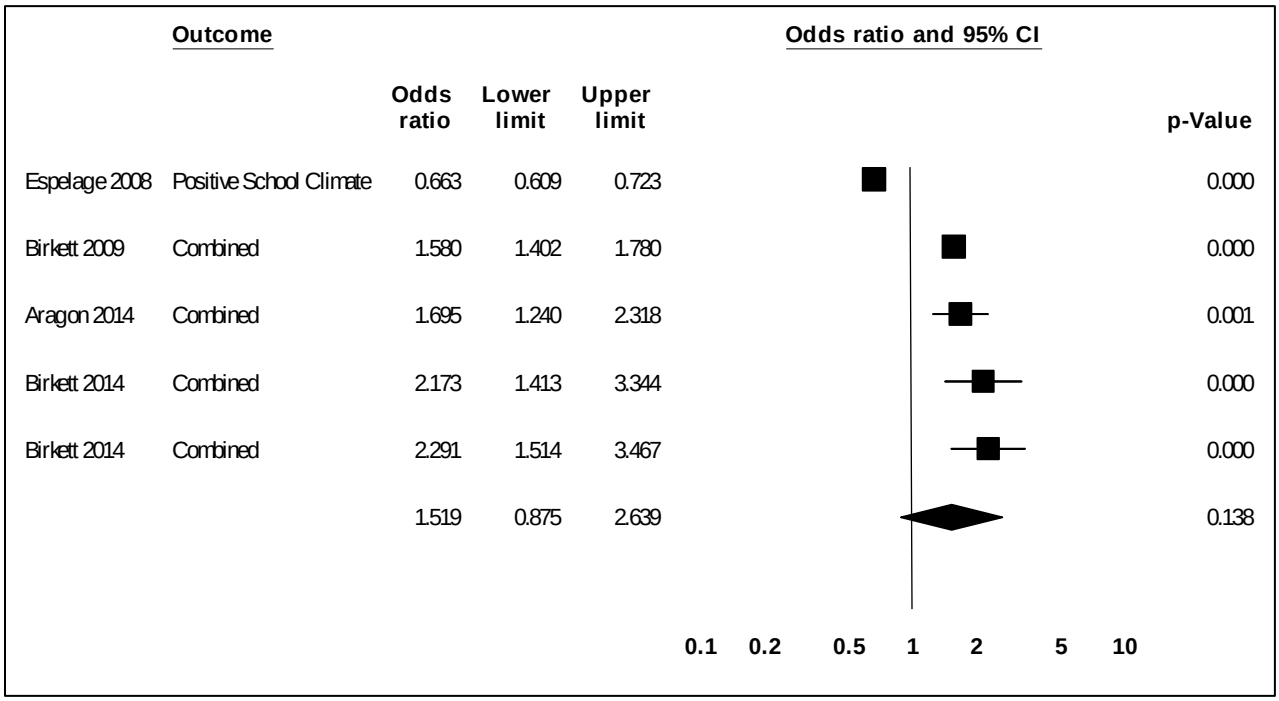

Figure 4: Random effects mean odds ratio and confidence intervals for adverse psychological and physical health outcomes among sexual minority students; Heterosexual sample was treated as Ref (1.00) for odds ratio analysis

Planned and attempted suicide. A total of seven studies yielded 10 odds ratios to investigate the disparity between heterosexual and sexual minority students in prevalence of planned and attempted suicides (see Figure 5). The estimated odds ratio and confidence intervals for suicide plans (k = 1; OR = 3.150; 95% CI = 2.517 – 3.942) and suicide attempts (k = 5; OR = 3.636; 95% CI = 2.687 - 4.920) among sexual minority students were found to be statistically significant. Self-harm (k = 4; OR = 5.032; 95% CI = 3.582 – 7.070) was also found to be statistically significant (see Table 4). The results clearly indicate that sexual minority students are at higher risk for suicide ideation, plans, and attempts than their heterosexual counterparts.

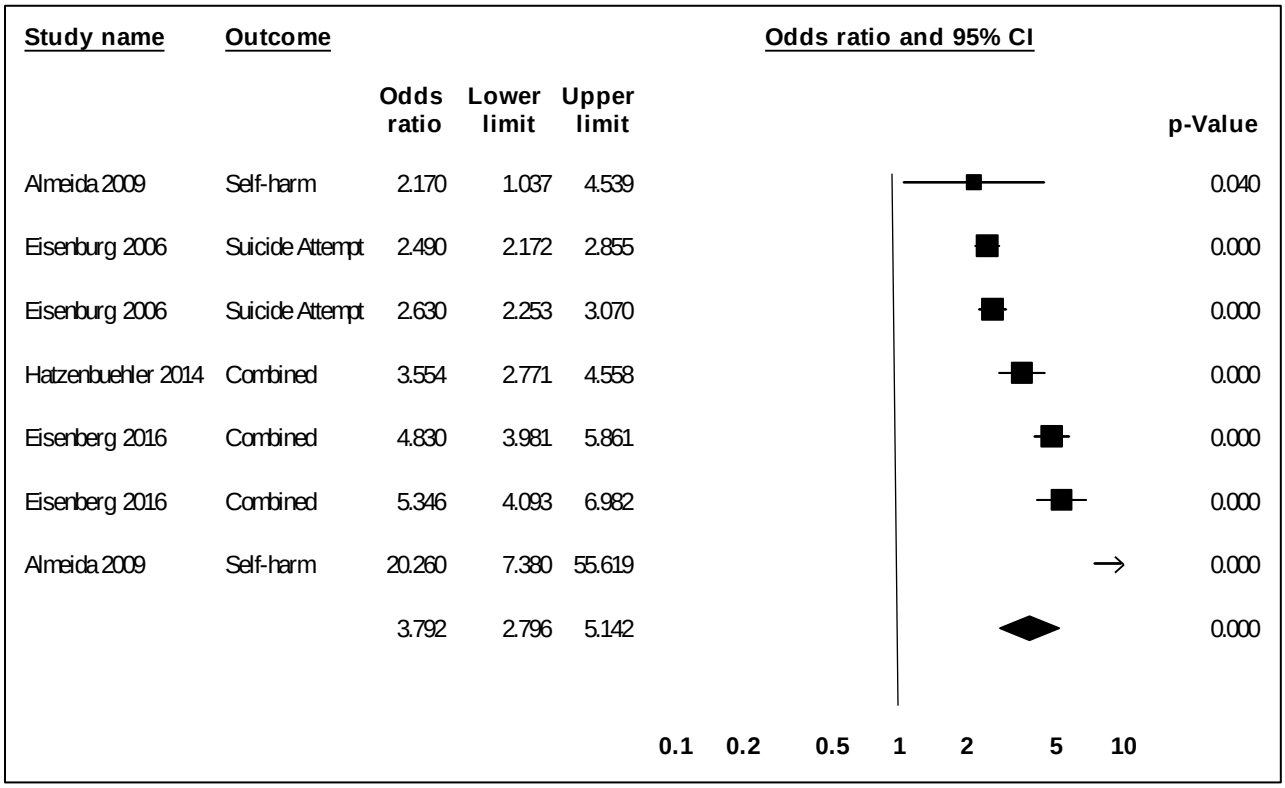

Figure 5: Random effects mean odds ratio and confidence intervals for suicide plans and attempts among sexual minority students; Heterosexual sample was treated as Ref (1.00) for odds ratio analysis

The Relationship between Victimization at School and Adverse Outcomes

A total of 16 correlation coefficients were used to investigate the relationship between peer victimization on adverse psychological outcomes (k = 11); adverse educational outcomes (k = 2); and suicide ideation, plans, and attempts (k = 3) (see Table 5).

Table 5: *Results from the correlation coefficient analysis between peer victimization and adverse outcomes among sexual minority students*

Source	*k*	*r*	95% CI Lower	95% CI Upper	*p*
Relationship between school victimization and adverse psychological and educational outcomes	**16**	**0.232**	**0.147**	**0.315**	**0.000**
Adverse psychological outcome	11	0.223	0.193	0.252	0.000
Adverse educational outcome	2	0.304	-0.045	0.587	0.087
Suicide ideation, plans, and attempts	3	0.210	0.062	0.349	0.006

Relationship between peer victimization and adverse psychological outcomes. The total estimated correlation coefficient representing the relationship between peer victimization and adverse psychological outcome ($k = 11$; $r = 0.223$; 95% *CI*: 0.193 – 0.252; $p < 0.01$) was found to be statistically significant (see Figure 6). The results indicate a positive relationship between the variables suggesting that prevalence of adverse psychological outcomes increase as peer victimization rate increases.

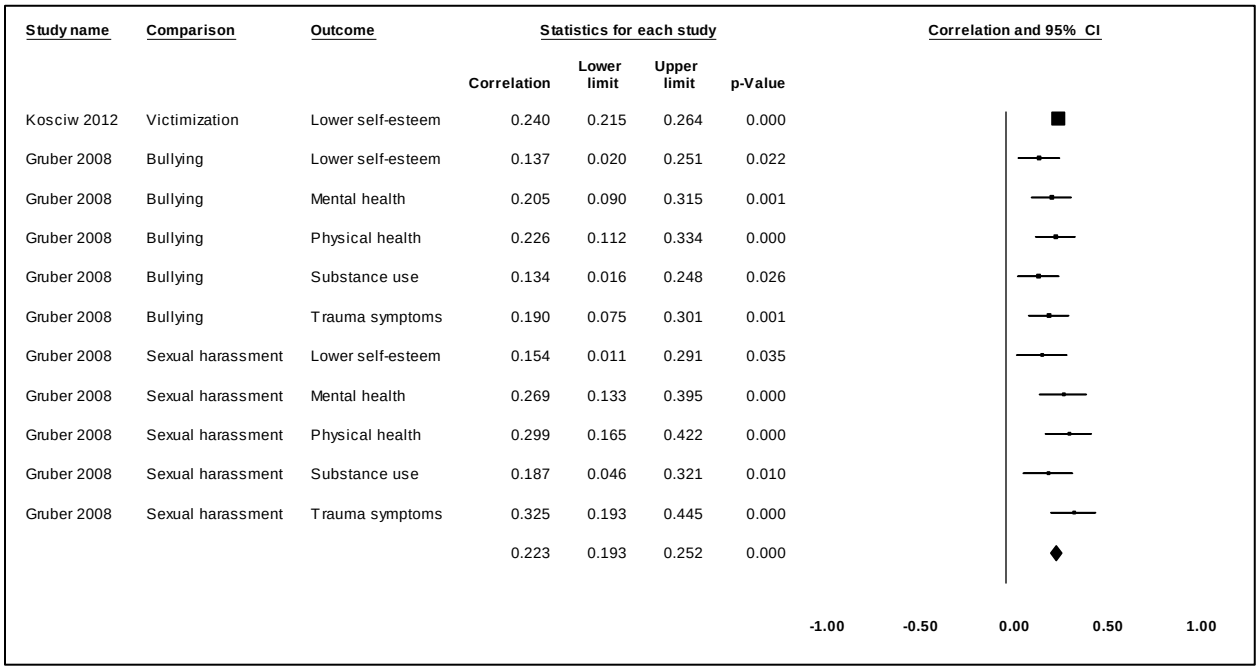

Figure 6: Random effects correlation coefficient and confidence intervals for victimization and negative psychological outcomes among sexual minority students

Relationship between peer victimization and adverse educational outcomes. The total estimated correlation coefficient representing the relationship between peer victimization and adverse educational outcome (k = 2; r = 0.304; 95% *CI*: -0.045 – 0.587; p >0.01) was not statistically significant (see Figure 7). This could be due to low number of studies included in this analysis. The results, however, indicate a positive relationship between the variables suggesting that prevalence of adverse academic outcomes increase as peer victimization increases.

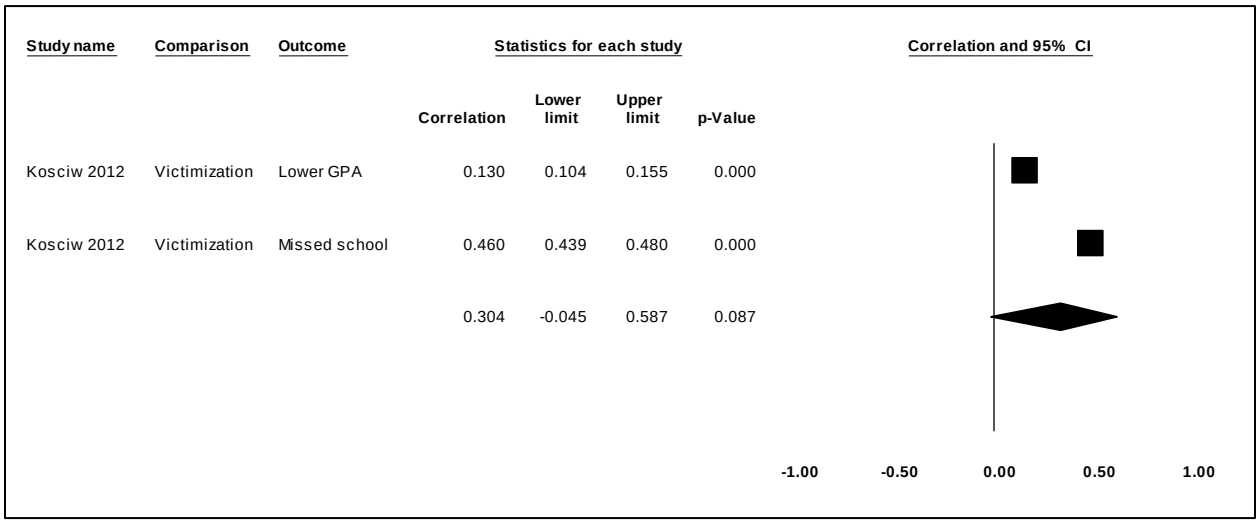

Figure 7: Random effects correlation coefficient and confidence intervals for victimization and negative educational outcomes among sexual minority students

Relationship between victimization and suicide ideation, plans, and attempts. The total estimated correlation coefficient representing the relationship between peer victimization and suicide among sexual minority students (k = 3; r = 0.210; 95% *CI*: 0.062 – 0.349; p <0.01) was found to be statistically significant (see Figure 8). The results indicate a positive relationship between the variables suggesting that prevalence of suicide ideation, plans, and attempts increase as peer victimization increases.

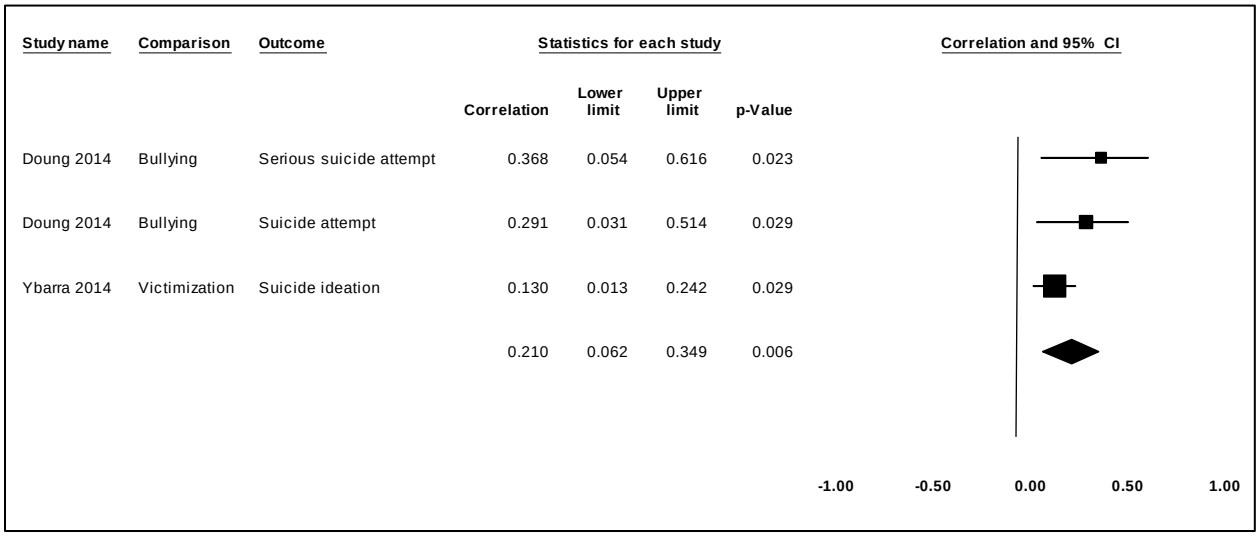

Figure 8: Random effects correlation coefficient and confidence intervals for victimization and suicide among sexual minority students

The Moderating effects of Supportive School Climate on Adverse Outcomes

A total of 24 correlation coefficients were used to investigate the moderating effects of supportive school climate on peer victimization (k = 6); educational outcomes (k = 6); adverse psychological outcomes (k = 6); and suicide (k = 6) among sexual minority students (see Table 6).

Table 6: *Results from the correlation coefficient analysis between supportive school climate and peer victimization, adverse psychological and educational outcomes, and suicide ideation among sexual minority students*

Source	*k*	*r*	95% CI Lower	95% CI Upper	*p*
Moderating effects of school climate on peer victimization	6	-0.107	-0.209	-0.002	0.045
Moderating effects of school climate on adverse psychological outcomes	6	-0.174	-0.254	-0.091	0.000
Moderating effects of school climate on suicide ideation, plans, and attempts	6	-0.069	-0.089	-0.048	0.000
Moderating effects of school climate on educational outcomes	6	-0.079	-0.099	-0.059	0.000

Moderating effects of supportive school climate on peer victimization. The total estimated correlation coefficient representing the effects of moderating school climate on peer victimization among sexual minority students ($k = 6$; $r = -0.107$; 95% *CI*: -0.209 - -0.002; $p < 0.05$) was found to be statistically significant (see Figure 9). The results indicate a negative relationship between the variables, suggesting that as supportive school climate increases the prevalence of peer victimization decreases.

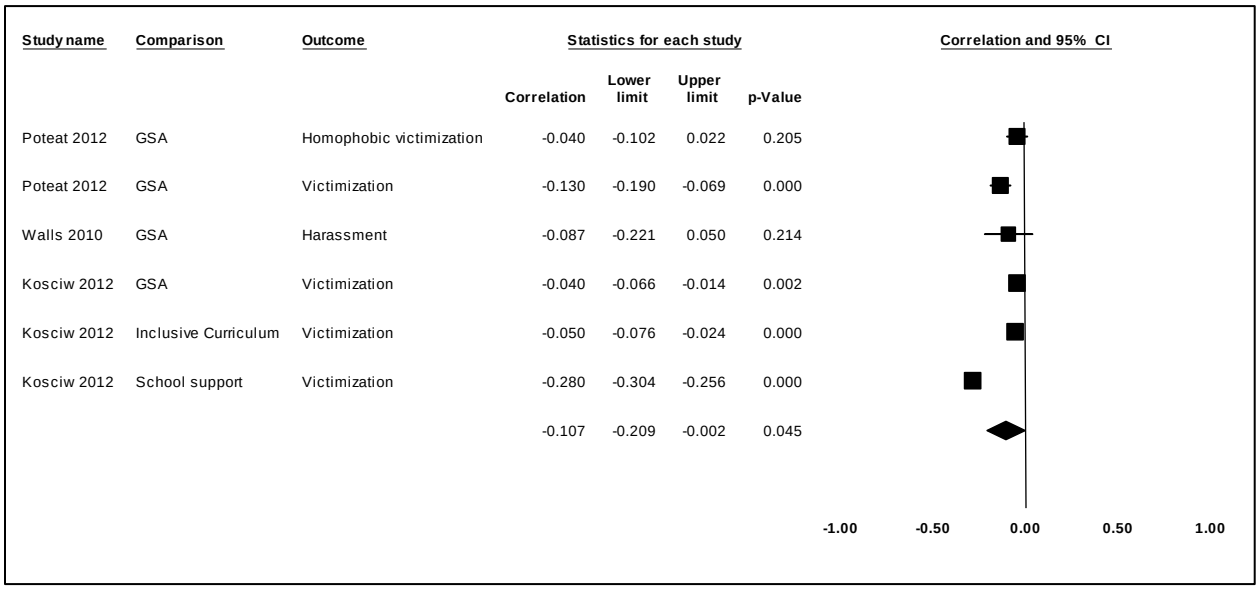

Figure 9: Random effects correlation coefficient and confidence intervals moderating effects of supportive school climate on peer victimization

Moderating effects of supportive school climate on adverse psychological outcomes. The total estimated correlation coefficient representing the effects of moderating school climate on adverse psychological outcomes among sexual minority students (k = 6; r = -0.174; 95% *CI*: -0.254 - -0.091; p< 0.05) was found to be statistically significant (see Figure 10). The results indicate a negative relationship between the variables, suggesting that as supportive school climate increases the prevalence of adverse psychological outcomes decreases.

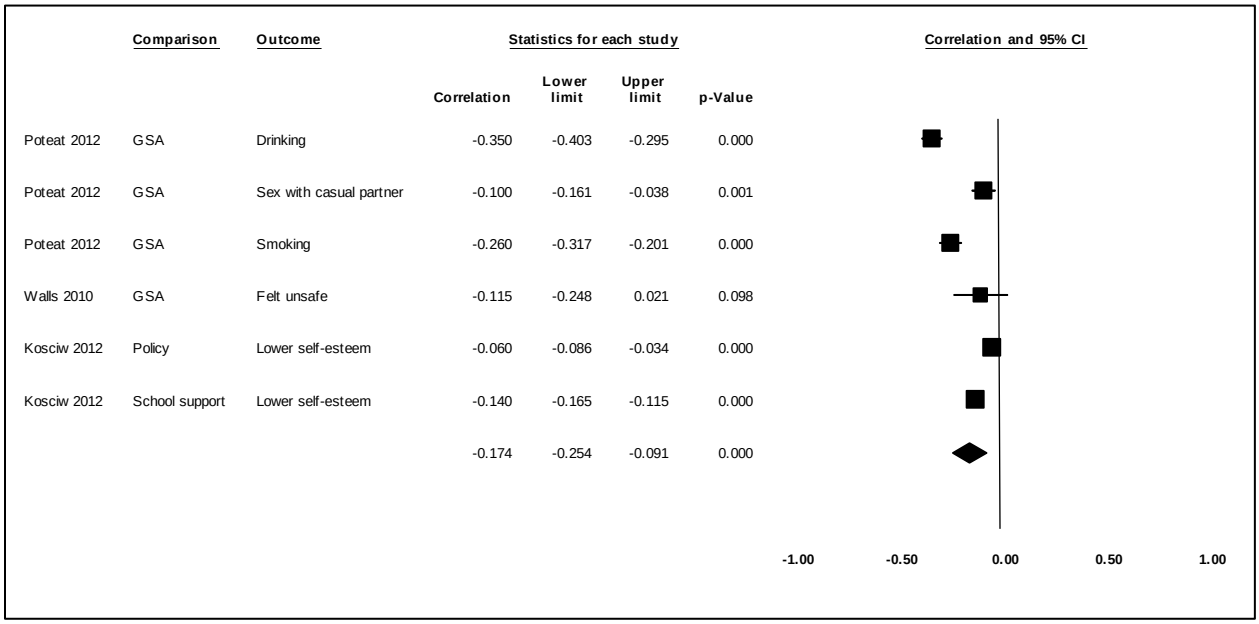

Figure 10: Random effects correlation coefficient and confidence intervals moderating effects of supportive school climate on adverse psychological outcomes

Moderating effects of supportive school climate on suicide ideation, plans, and attempts. The total estimated correlation coefficient representing the effects of moderating school climate on prevalence of suicide among sexual minority students (k = 6; r = -0.069; 95% *CI*: -0.089 - -0.048; p< 0.05) was found to be statistically significant (see Figure 11). The results indicate a negative relationship between the variables, indicating that as supportive school

climate increases the prevalence of suicide among sexual minority students decreases.

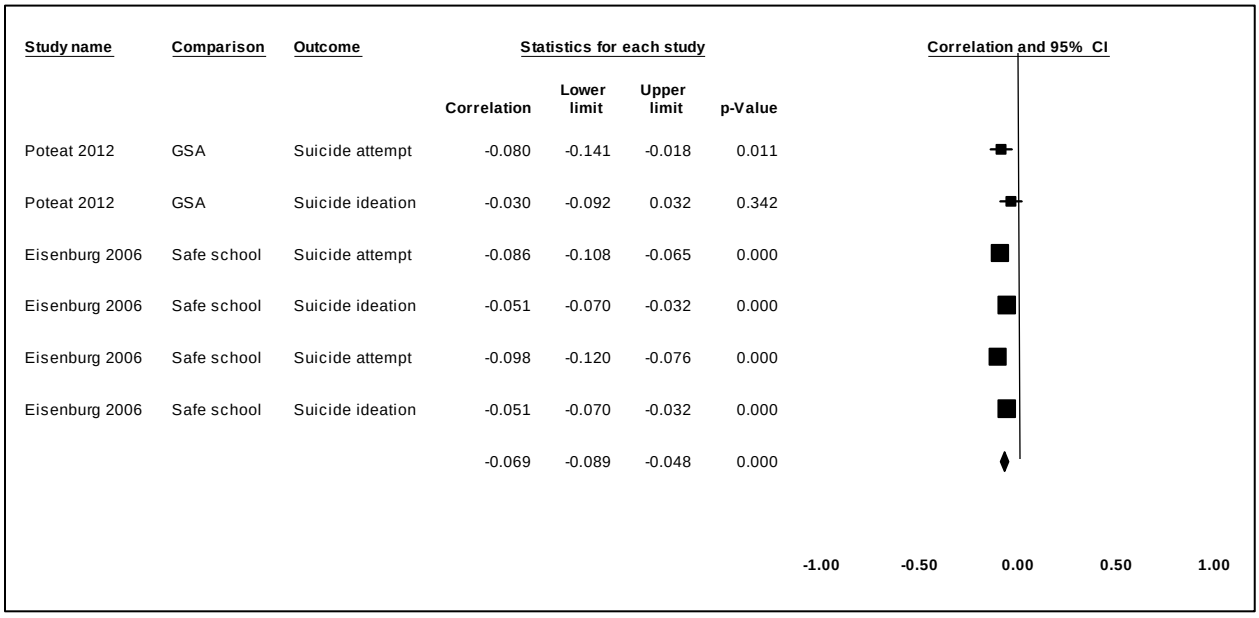

Figure 11: Random effects correlation coefficient and confidence intervals moderating effects of supportive school climate on prevalence of suicide

Moderating effects of supportive school climate on adverse educational outcomes.

The total estimated correlation coefficient representing the effects of moderating school climate on educational outcomes among sexual minority students (k = 6; r = -0.079; 95% *CI*: -0.099 - -0.059; p< 0.05) was found to be statistically significant (see Figure 12). The results indicate a negative relationship between the variables, suggesting that as supportive school climate increases the prevalence of adverse educational outcomes decreases.

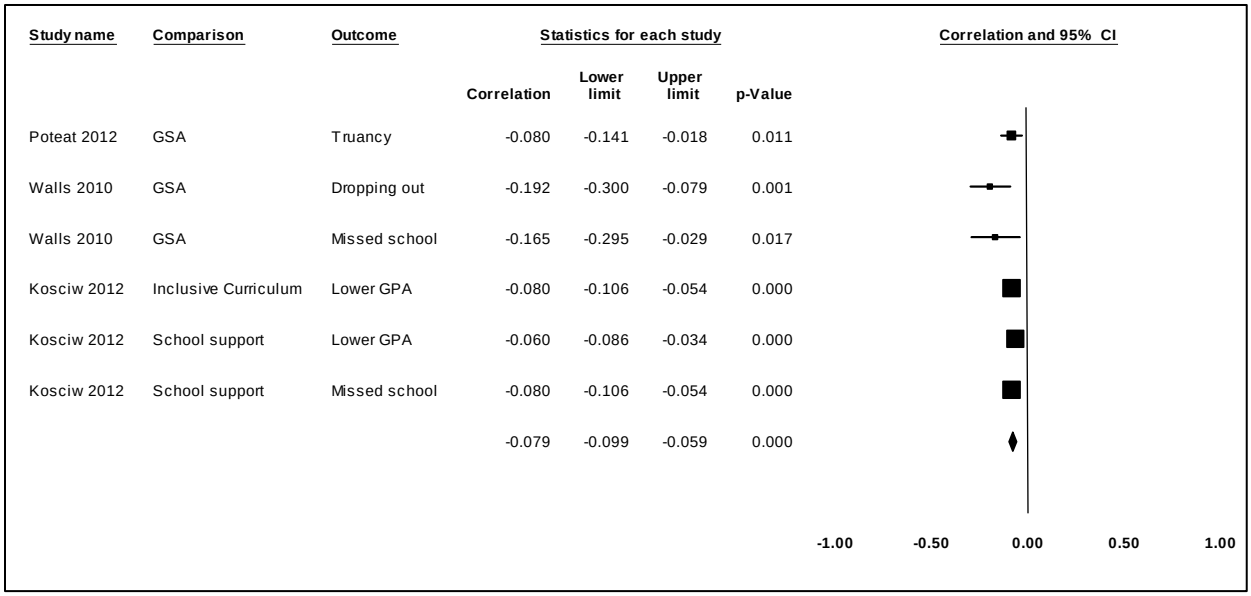

Figure 12: Random effects correlation coefficient and confidence intervals moderating effects of supportive school climate on adverse educational outcomes

CHAPTER 5. A CASE STUDY

Alabama Public Schools – Policies and Practices Impacting Sexual Minority Youth

The Alabama legislature enacted the Alabama Student Harassment Prevention Act of 2009, with the purpose of the ensuring that ALL Alabama's students would be provided with a learning environment that was supportive and free from harassment (AL Code § 16-28B, 2009). Therefore, the Alabama State Department of Education (ALSDE) was given the task of development of a model anti-harassment policy. The procedural policy was to be adopted or used as a guideline in the public school systems in an effort to manage and prevent harassment based on any student's characteristics. The ALSDE was required to provide the local boards of education with a series of professional development opportunities to ensure successful implementation of the newly mandated policy. During the school year 2014-2015, the state of Alabama consisted of 137 city and county local boards of education, serving 371,617 students, grades prekindergarten through 12 (Alabama State Department of Education, n.d.). The present case study examines the required elements of the aforementioned anti-harassment policy and investigates the compliance of Alabama local boards of education in that regards.

Alabama anti-harassment policy

Alabama Anti-Harassment Act of 2009 requires all city and county boards of educations to adopt procedural policies, set forth by the State Department of Education. The intent of such requirement is to manage and prevent student against student bullying and harassment based on the characteristics of a student (AL Code§ 16-28B, 2009, section 2). Further, local school boards are required by law to implement an anti-harassment policy that contains the following elements:

- Clear definition of harassment, intimidation, and threat;
- A statement prohibiting harassment, violence, threats of violence;

- A clearly defined procedure for students to report harassment, intimidation, and threat;
- A clear statement prohibiting retaliation against students who report such incidences;
- Procedural guidelines for investigation of reported incidences, specifying the responsible person for conducting the investigation;
- A series of predetermined graduated consequences for students who intimidate, harass, or threaten another student (AL Code § 16-28B, 2009, section 5).

Moreover, city and county boards of educations are required to report all incidents of harassment, intimidation, and threats to the State Department of Education. These reports are to be made available for public access (AL Code § 16-28B, 2009, section 6).

Data collection method

The Alabama State Department of Education website was consulted to collect information and statistics pertaining to the local city and county boards of education. Extracted information and statistics included a list of the local boards of educations and the annual incident reports, filed by all schools in Alabama. Data from 2013 United States Youth Risk Behavior Surveillance, conducted by Center for Disease Control and Prevention, served as a benchmark to evaluate incident reports, filed by the Alabama public schools.

Results

The Youth Risk Behavior Surveillance System (YRBSS) was developed for the purposes of monitoring health risk behaviors that affect high school students. The YRBSS includes a national school-based Youth Risk Behavior Survey (YRBS) that is conducted every two years, by the Center for disease Control and Prevention. The survey is administered locally to students enrolled in grades 9 through 12, in all 50 states. The instrument comprises of 104 behavioral questions including whether or not they had been bullied or engaged in fighting on school

properties (Center for Disease Control and Prevention 2014). Results from the 2013 national YRBS reveals that 10.9% (95% CI: 9.1 – 13.0) of students in Alabama were engaged in physical fights and 20.8% (95% CI: 18.3 – 23.60) were bullied on school properties (Center for Disease Control and Prevention, 2014). However the incident reports filed by every school in Alabama, revealed that only 3.05% of the students engaged in physical fights, 0.73% were harassed, and 0.49% received threats and were intimidated (see Table 7). The results clearly present cases of under-reporting of incidents by the Alabama public schools. Further, it raises concerns about the Alabama Department of Education's accountability practices in respect to the city and county school systems' compliance of the state's Student Harassment Prevention Act of 2009.

Table 7: *Reports of incident reports filed by Alabama public schools in 2014*

School system	Reported Enrollment for grades 6-12	Defiance of Authority	Disobedience	Reported Fighting	Reported Harassment	Reported Sexual Offenses	Reported Threat & intimidation
136	371,617	16,244	12,415	11,348	2,702	438	1,806
100%	100%	4.37%	3.34%	3.05%	0.73%	0.12%	0.49%

Source: Alabama State Department of Education (n.d.)

The results from the investigation of anti-harassment policies adopted by Alabama boards of educations reveals that 37% of the boards of education do not have an anti-harassment policy that follows the guidelines set forth by the Alabama Department of Education; 56% do not have a student complaint form; 31% do not enlist a series of gradual consequences for students who bully or harass; and 38% do not list a designated responsible party for the investigation nor do they enlist an investigational procedure (see Table 8). All of which, are specifically required by the Alabama Anti-Harassment Act of 2009.

Table 8: *Number of Alabama school systems' compliance of the state's Student Harassment Prevention Act of 2009*

	School System	Bullying Policy	Student Complaint Form	Prohibiting Statement	Definition	Series of Consequences	Student Reporting Procedure	Investigation Procedure	Statement Prohibiting Retaliation
School systems in compliance	130* 100%	82 63%	57 44%	97 75%	94 72%	90 69%	87 67%	80 62%	76 58%
School systems not in compliance	130* 100%	48 37%	73 56%	33 25%	36 28%	40 31%	43 33%	50 38%	54 42%

** City and County Boards of Educations that did not have a working web address (k=7) were excluded from this table*

In investigating anti-harassment policies in Alabama and the protection they offer sexual minority students, it was found that only 37 boards of education have enumerated sexual orientation in their policies. Further, only 12 have enumerated gender identity as a protected student characteristics in respect to harassment and bullying (see Table 9). This may be influenced by the section 16-40A-2 of Code of Alabama, regarding sex education in public schools. According to the section 16-40A-2 of Code of Alabama titled: Minimum contents to be included in sex education program or curriculum, homosexual conduct is considered "criminal" and not an accepted form of "lifestyle" (AL Code § 16-40A-2, 1992). The code further mandates that the curriculum should discuss the "criminality of homosexuality" from a public health perspective (AL Code § 16-40A-2, 1992,). The present case study suggests that due to many institutional elements, the majority of Alabama public schools lack support and responsiveness towards the needs of sexual minority students (see Figure 11).

Table 9: *School systems that have enumerated sexual orientation and gender identity in their policies*

			Enumeration of sexual orientation and/or gender identity in:				
School System	Sexual orientation	Gender identity	Harassment policy	Student code of conduct	Sexual harassment policy	Internet use Netiquette	Student's rights and responsibilities
Alexander City	Y	Y	Y	-	-	-	-
Arab City	Y	-	Y	-	-	-	-
Athens City	Y	-	Y	-	-	-	-

Autauga County	Y	-	Y	-	-	-	-
Baldwin County	Y	Y	Y	-	-	-	-
Birmingham City	Y	Y	Y	-	-	-	-
Blount County	Y	-	-	Y	-	-	-
Boaz City	Y	-	-	Y	-	-	-
Bullock County	Y	-	Y	-	-	-	-
Calhoun County	Y	-	-	Y	-	-	-
Choctaw County	Y	Y	Y	-	-	-	-
Cleburne County	Y	-	-	Y	-	-	-
Cullman County	Y	-	-	Y	-	-	-
Decatur City	Y	-	-	Y	-	-	-
Demopolis City	Y	Y	Y	-	-	-	-
Homewood City	Y	-	Y	-	-	-	-
Hoover City	Y	Y	-	Y	-	-	-
Houston County	Y	-	-	-	-	Y	-
Jacksonville City	Y	-	-	Y	-	-	-
Jefferson County	Y	-	-	Y	-	-	-
Marshall County	Y	-	-	-	Y	-	-
Midfield City	Y	-	-	Y	-	-	-
Mobile County	Y	-	-	-	-	-	Y
Oneonta City	Y	Y	Y	-	-	-	-
Opp City	Y		-	-	-	Y	-
Perry County	Y	Y	Y	-	-	-	-
Piedmont City	Y	Y	Y	-	-	-	-
Pike County	Y	-	-	Y	-	-	-
Scottsboro City	Y	-	Y	-	-	-	-
St Clair County	Y	-	-	Y	-	-	-
Tarrant City	Y	Y	Y	-	-	-	-
Troy City	Y		Y	-	-	-	-
Trussville City	Y	Y	Y	-	-	-	-
Tuscaloosa City	Y	Y	Y	-	-	-	-
Tuscaloosa County	Y	-	Y	-	-	-	-
Total	35	12	19	12	1	2	1

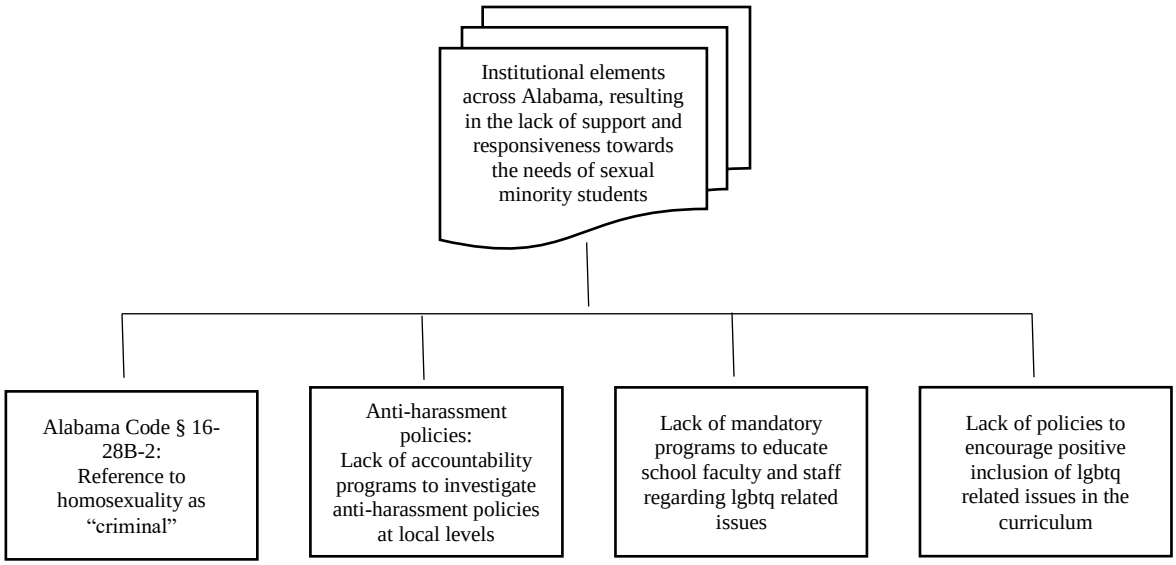

Figure 13: Institutional elements across state of Alabama, resulting in the lack of school support towards sexual minority students

CHAPTER 6. DISCUSSION

The goal of the present study was to examine school climate and its effects on the well-being of sexual minority students in public schools. The study was focused on peer victimization, adverse outcomes, and whether there was a relationship between the two variables. Further, the study aimed at exploring whether positive school climate (characterized by supportive faculty, presence of GSA, and effective anti-harassment and bullying policies) reduced the prevalence of peer victimization among LGBTQ students. Moreover, the study investigated whether sexual minority students who perceived their school climate as positive, reported less adverse outcomes.

Through a systematic meta-analysis of 20 independent samples which yielded 88 effect sizes, this study demonstrated a disparity in the prevalence of victimization and adverse outcomes between sexual minority and heterosexual students. Results suggest that sexual minority students are 3.36 times more likely than their heterosexual cohorts, to experience peer victimization at schools. It was also revealed that LGBTQ students are 2.54 times more susceptible to negative psychological outcomes than heterosexual students. These findings underscore the magnitude of the difference in rates of victimization between LGBTQ and heterosexual students. The disparity is especially alarming in the rates of suicide ideation, plans, and attempts among sexual minority students. The results demonstrated that sexual minority students are 3.79 times more likely to have suicidal thoughts.

Among other results, the study found a statistically significant positive relationship, between victimization and adverse mental health outcomes. This is consistent with previous research that has linked peer victimization to negative psychological and educational outcomes (Kosciw et al., 2014 & Espelage et al., 2008). The study also found a statistically significant

positive relationship between victimization and suicidal ideation among sexual minority adolescents.

Consistent with the literature, the present study found a positive relationship between improved learning environments (characterized by the presence of GSA, supportive faculty, and effective anti-discrimination policies) and LGBTQ students' psychological well-being (Toomey et al., 2011 & Kosciw et al., 2014). Results indicate the importance of supportive school policies on the general well-being of sexual minority youth. This finding is central to the goal of the present study in respect to the Alabama's public school policies. As demonstrated, the majority of Alabama's city and county public schools do not offer adequate protection to the sexual minority student population. As exhibited, 35 local boards of educations in Alabama, were found to have enumerated sexual orientation as a protected characteristic. However, only 19 specifically prohibit harassment and bullying against LGBTQ students in their anti-harassment policies. The remaining 16 boards of educations mentioned "sexual orientation" in their netiquette policies, codes of conduct, or sexual harassment policies. Only 12 out of 137 Alabama's city and county boards of education specified gender identity as a protected characteristics.

The findings of the present study provide implications for intervention and prevention, especially through policy. This is especially applicable to the state of Alabama. The legislature need to revisit the reference to homosexuality as "criminal". This only perpetuates heterosexism across Alabama public schools. As mentioned, the Alabama Student Harassment Prevention Act of 2009 was enacted with the sole purpose of providing students with safe learning environment that is free from harassment. By law, all public schools across Alabama, are required to implement an anti-harassment policy that follows the standards set forth by the Alabama

Department of Education. However, this requirement is not being enforced. This is evident by the number of school systems that are still not in compliance with all the required standards. Further, decades of research suggest that sexual minority population are a vulnerable population who are at higher risks for victimization and adverse psychological outcomes. School policies need to reflect this evidence based research finding, by enumerating sexual orientation/gender identity as protected student characteristic in all their policies. This is a matter of public health issue and it should be addressed as such.

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