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School Support Protects LGB and Heterosexual Students from Sexual Orientation

Victimization:

A Latent Moderated Structural Equation Model

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of
Philosophy in Counseling, Clinical, and School Psychology

by

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School Support Protects LGB and Heterosexual Students from Sexual Orientation

Victimization:

A Latent Moderated Structural Equation Model

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by

Stephanie Elyse Adams

DEDICATION

To all the LGBTQIA+ kids, Latinx kids, marginalized kids, lonely kids, weird kids, and “I hate school” kids. You light up my life. You are a gift to this undeserving world.

ACKNOWLEDGMENTS

I would like to extend the following sincere gratitude:

- To my highly educated Mexican American family, who paved the way for my success as a 3rd generation higher education graduate.
- To Dr. Robert Mendez, D.D.S., my grandfather, who patiently answered all my questions about mechanics, science, biology, and zoology every day I followed him around the yard, and who only got irritated with me when I refused to let him teach me decimal math at age 5.
- To Mrs. Lenore Mendez, my grandmother, who delighted in exploring curiosities and skepticisms with me and has always encouraged my learning and growth, even when it meant taking me to places far away from her.
- To Dr. Carolyn Mendez-Luck, my mother, who inspires me every day to become even a *quarter* of the professional, amazing, there's-always-a-way, don't-take-no-for-an-answer, boss woman that she is.
- To Dr. Jeffrey Luck, my stepfather, who, despite my nasty 16-year-old tantrums, has generously poured his heart and efforts into my success from the beginning.
- To Mr. Lightholder, my Kindergarten teacher at Bella Vista Elementary School, who recognized how thirsty, curious, and *capable* our tiny young minds were, and provided accommodations to a very inattentive, hyperactive, and easily under-stimulated student.
- To Mrs. Branman, my 3rd and 4th grade teacher at Bella Vista Elementary School, who tirelessly intervened in our classroom bullying and who lit up when reading my very first piece of creative writing.
- To Mrs. Favilla, my 7th grade English teacher at Macy Intermediate School, who took time from her busy teaching schedule to proofread my fantasy fiction chapters and encouraged me to publish my work.
- To Mr. Anderson, my 9th grade geometry teacher at Schurr High School who had a reputation for being stern, but would stop me after class each day ask me, "Who cares about you?" and then silently point to his chest, because he recognized a student who was suffering.
- To Dr. John Wallace at UC Berkeley, my undergraduate East Asian Languages and Culture professor, who encouraged my passions, never turned down my eager questions, and provided a warmth to us young undergraduates who were a long way from home.
- To Dr. F. Tina Panteleakos, my psychotherapy mentor, who sees me for all I am and empowers me to be all I can be, and without whom this dissertation would never be written!
- To soon-to-be Dr. Andrew Choi, my dearest friend and unwavering source of professional and personal support, without whom my journey would have been much lonelier, longer, and lost.
- To Dr. Karen Nylund-Gibson, my quantitative methods professor and mentor, who manages to be both brilliant *and* warm, gracefully embodying the epitome of professional badass and real-life human being.
- To Dr. Michael Furlong, my advisor and dissertation chair, who has maintained a practical, steady course for me in my progress toward the Ph.D. and asked me questions throughout my time in graduate school that challenged me to consider broader perspectives and have answers ready for a complex world.

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ABSTRACT

School Support Protects LGB and Heterosexual Students from Sexual Orientation

Victimization:

A Latent Moderated Structural Equation Model

by

Stephanie Elyse Adams

Stigma and homonegativity contributes to a hostile climate of victimization for LGBTQ individuals inside and outside of school (Katz-Wise & Hyde, 2012; Kosciw, Greytak, Palmer, & Boesen, 2014). Additionally, many LGBTQ youth struggle with increased mental health risk, lower psychological well-being, and poorer school performance (e.g., Haas et al., 2011; Kosciw et al., 2014). Fortunately, researchers have found that feeling supported by school figures can buffer the adverse effects of both LGBTQ-based victimization and prejudice (e.g., Fisher et al., 2008; Kosciw et al., 2014). Using a structural equation model moderation approach with a sample of 235,064 adolescents, this analysis integrates Meyer's (2003) minority stress model and the buffering hypothesis (Cohen & McKay, 1984) to investigate to what extent self-reported school support may protect against potential effects of marginalized sexual orientation status and/or sexual orientation victimization (SOV; i.e., victimization based on being or being perceived as lesbian or gay). Results indicated that both sexual minority status and SOV significantly predicted negative and psychological outcomes, while school support predicted positive academic and psychological outcomes.

Although LGB students reported worse outcomes overall, the negative impact of SOV was significantly greater for heterosexual students' reports of school safety, *School Motivation*, *Truancy*, and *Psychological Distress*. *School Support* had a significantly stronger protective effect on heterosexual students' grades and *Psychological Distress*, on LGB students' *Truancy*, and on non-SOV students' *School Motivation*. Lastly, a significant three-way interaction was found between sexual orientation, SOV, and *School Support* for *Psychological Distress*, indicating that *School Support* buffered each group from *Psychological Distress*, although it appeared to have a greater buffering effect for heterosexual students in comparison to LGB students, particularly comparing LGB students without SOV to heterosexual students with SOV.

Keywords: structural equation modeling, moderation, LGB, victimization, school support, sexual orientation

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I. Introduction

This chapter outlines the issues at the heart of the study, the specific student experiences investigated through the study's research questions, and the significance of the current study.

A. Statement of the Problem

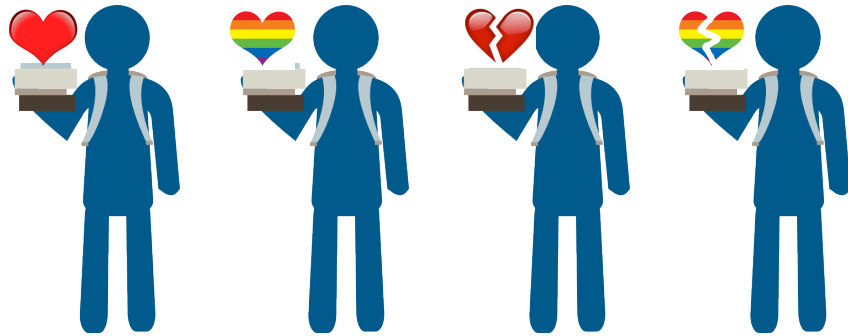
The recent passage of California laws such as AB 1266 (2013) and the FAIR Education Act (2011) indicate a political and cultural shift toward supporting lesbian, gay, bisexual, transgender, and questioning (LGBTQ) students' right to a safe and welcoming learning environment. Additionally, researchers have noticed a steady decline in LGBTQ-based harassment and bias in schools (McCabe, 2014; e.g., when comparing Kosciw, Greytak, Palmer, & Boesen, 2014 to Kosciw & Cullen, 2001). However, this decline in LGBTQ harassment and negative school climate has been slow; for example, in 2001 84% of LGBTQ students reported hearing homophobic remarks such as "faggot" or "dyke" frequently or often in school, which declined to 71% over the course of a decade; and is now resting at 65% in 2013 (Kosciw & Cullen, 2001; Kosciw et al., 2012, 2014). Most LGBTQ youth still experience verbal harassment (85%), discriminatory school policies and practices (56%), and hear homophobic remarks (65%), as captured by the Gay, Lesbian, and Straight Education Network (GLSEN)'s latest nationwide survey (Kosciw et al., 2014; McCabe, 2014). Furthermore, meta-analytic evidence indicates that LGB youth are 124% more likely to be bullied and 82% more likely to be victimized compared to heterosexual students (Fedewa & Ahn, 2011).

Fortunately, researchers have found that feeling supported and accepted across

family, peer, and school domains can buffer the adverse effects of both LGBTQ-based victimization and prejudice (e.g., Birkett, Espelage, & Koenig, 2009; Feinstein, Wadsworth, Davila, & Goldfried, 2014; Fisher et al., 2008; Kosciw et al., 2014; Poteat, Mereish, DiGiovanni, & Koenig, 2011a; Ryan, Russell, Huebner, Diaz, & Sanchez, 2010). School-based support appears especially fundamental in comparison to other forms of social support, as indicated by the greater overall effect sizes for improving well-being in studies examining school support (e.g., Chu, Saucier, & Hafner, 2010). Given the importance of school-based social supports for LGBTQ youth, this analysis investigates to what extent self-reported feelings of school support may protect against potential effects of marginalized sexual orientation status and/or sexual orientation victimization (SOV; i.e., victimization on based on being or being perceived as lesbian or gay).

B. Current Study

Utilizing a statewide dataset of 235,064 adolescent students, the present study investigates the paths of four potential youth experiences: the heterosexual student who does not experience SOV, the heterosexual student who is victimized, the LGB student who does not experience SOV, and the LGB student who is victimized. Any of these four students may find themselves in a school environment where they feel they can count on at least one adult to care about them, or an environment devoid of this support. The question is, how do these differing experiences affect these students' psychological and academic health and what buffering effect, if any, does school support provide?



Focusing on the two types of students who have *not* been victims of homophobic bullying, extant literature suggests that LGB youth experience poorer psychological and academic outcomes compared to their heterosexual peers (e.g., Haas, 2011). The traditional explanation for why LGB individuals experience worse outcomes is that psychological damage is inherent to non-heterosexuality (Bailey, 1999). Another explanation is that LGB students, because of their sexual minority status, face the additional barrier of attempting to navigate a society and culture that is historically hostile toward them — a theory known as the *minority stress hypothesis* (Meyer, 2003). Thus, even without the specific experience of being bullied by a peer about their sexual orientation, researchers can expect that these non-victimized LGB face worse outcomes compared to the non-victimized heterosexual students.

As for the students who *do* experience sexual orientation victimization, we can expect this bullying to negatively impact both heterosexual and LGB students, as bullying of any kind is harmful for youth (e.g., Espelage, Bosworth, & Simon, 2000; Finkelhor & Kendall-Tackett, 1997) and, in fact, studies have demonstrated the negative effects of this type of bullying for both heterosexual and LGB students (e.g., Poteat & Espelage, 2007). However, for those youth who self-identify as LGB, sexual orientation victimization becomes an attack on their personal identity in ways that it is not always true for heterosexually identified youth (e.g., Poteat et al., 2011), so it is expected that these youth suffer additively negative

consequences for this type of victimization.

However, what happens when the LGB student who is bullied for being gay is then able to turn to a supportive teacher or other adult at school? School staff may not be able to always control whether a student has experienced getting bullied, but



adults at school can choose to support and care about their students. Given the empirically established protective effects of school-based support (e.g., Fisher et al., 2008), this study hypothesized that the negative effects of this sexual orientation victimization may be buffered by feeling cared about by a teacher or other adult at school. This study aimed to answer whether school staff's support of vulnerable youth is powerful enough to alter what could otherwise be a negative academic and psychological trajectory for both heterosexual and LGB students.

C. The Analysis

Considering how an individual student's sexual orientation, school-based victimization experience, and the interaction of these two predictors may lead to negative psychological and academic outcomes requires a structural equation model (SEM) path analysis. The additional examination of how school support may moderate these effects requires a moderated path analysis. The theoretical path model, simplified and without defined measures, can be illustrated with Figure 2 (see Figure 12 for a path diagram of the full model with defined measures):

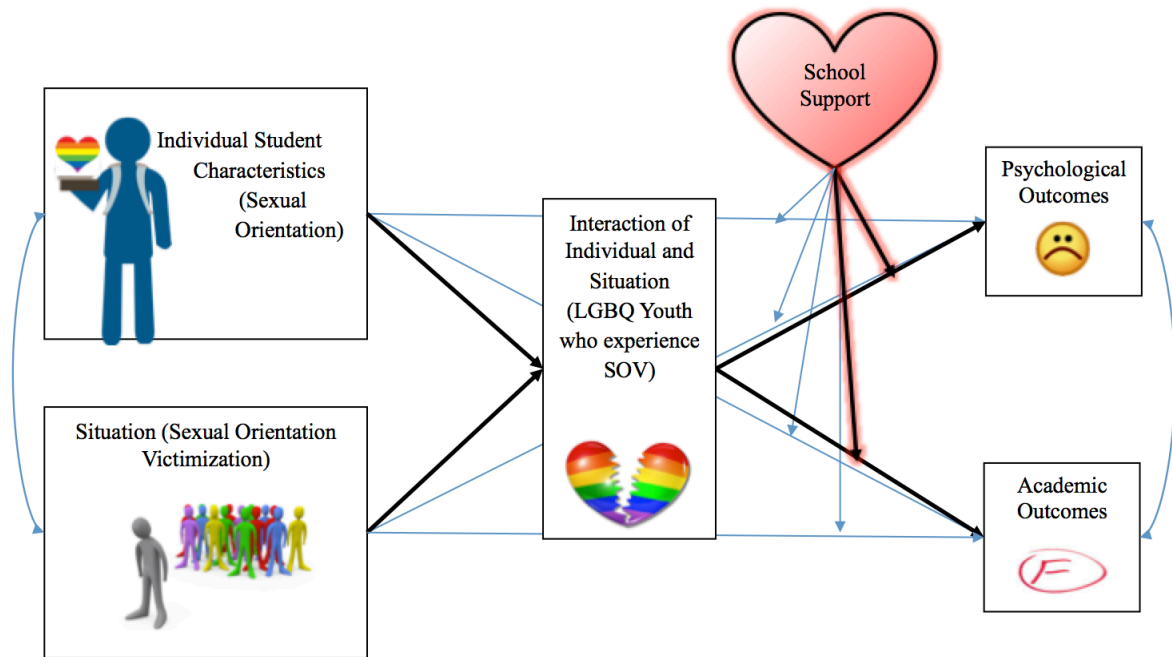


Figure 2. Integrated theoretical model of social support buffering the effects of SOV and sexual orientation on psychological and academic outcomes.

The lighter blue paths indicate influences that are present and exist when examining this issue, while the black paths indicate the analysis of greatest interest: the outcomes for youth who both self-identify as LGB and report being victimized at school. The minority stress model provides a contextual explanation for the potential additive negative effects of sexual minority status stigma. The buffering hypothesis provides a context for examining the potential protective effects of school support (the moderator) for students experiencing one or a combination of these vulnerabilities.

D. Research Questions

The current study poses the following research questions and hypotheses (also seen in Table 2 of the Appendix):

(Q1a) *Main effect*: Do self-identified LGB students experience significantly worse academic and psychological outcomes compared to their heterosexual peers?

Hypothesis 1a: Yes, compared to heterosexual peers, self-identified LGB students will report significantly lower perceptions of school safety, lower self-reported grades, lower *School Motivation*, higher *Truancy*, and higher *Psychological Distress*.

(Q1b) *Main effect*: Do students with SOV experience significantly worse academic and psychological outcomes compared to their non-SOV peers?

Hypothesis 1b: Yes, compared to non-SOV peers, students who experience SOV will report significantly lower perceptions of school safety, lower self-reported grades, lower *School Motivation*, higher *Truancy*, and higher *Psychological Distress*.

(Q2) *Interaction*: Do self-identified LGB students who are also victims of SOV experience significantly worse academic and psychological outcomes compared to their non-SOV LGB peers and SOV heterosexual peers?

Hypothesis 2: Yes, compared to non-SOV LGB peers and heterosexual peers, LGB students who also experience SOV will report significantly lower perceptions of school safety, lower self-reported grades, lower *School Motivation*, higher *Truancy*, and higher *Psychological Distress*.

(Q3a) *Two-Way Moderation*: Does *School Support* (i.e., feeling supported by a teacher or other school adult) significantly protect LGB students from negative academic and psychological outcomes?

Hypothesis 3a: Yes, School Support will significantly moderate the negative effect of LGB status on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

(Q3b) *Two-Way Moderation: Does School Support (i.e., feeling supported by a teacher or other school adult) significantly protect students who experience SOV from negative academic and psychological outcomes?*

Hypothesis 3b: Yes, School Support will significantly moderate the negative effect of SOV on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

(Q4) *Three-Way Moderation: Does School Support (i.e., feeling supported by a teacher or other school adult) significantly protect students who self-identify as LGB and experience SOV from negative academic and psychological outcomes?*

Hypothesis 4: Yes, School Support will significantly moderate the negative effect of the interaction of LGB status and SOV on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

E. Significance of the Study

This study seeks to (a) build upon previous limited studies examining the potential protective resources of LGB youth; and (b) utilize a structural equation modeling (SEM) moderation approach to examine the complex relations between students' self-identified sexual orientation, lesbian/gay-based victimization, school-based social support, and psychological and academic outcomes. Specifically, this study seeks to answer whether self-

identified LGB students who are also victims of lesbian/gay bullying are more likely to report lower grades, less school safety, less academic engagement, less school motivation, and higher psychological distress compared to their non-victimized and victimized heterosexual peers. Additionally, this study seeks to assess whether feeling supported by an adult figure at school, as measured by *school support*, protects *all* students from negative effects on these outcomes associated with victimization, and whether this protective effect is stronger for some students than others.

The current analysis attempts to address various gaps in the literature specific to LGBTQ school-based victimization, resilience, and sexual orientation identity. According to a meta-analysis by Katz-Wise and Hyde (2012) reviewing literature examining victimization of lesbian, gay, and bisexual individuals, most victimization literature has focused on comparing differences within LGB groups rather than between LGB and heterosexual groups. This study attempts to address this gap in the literature by including victimized and non-victimized heterosexual peers alongside LGB students. Additionally, while most extant studies have not assessed sexual orientation directly or included it in their examinations of school-based victimization (Toomey & Russell, 2016), the current study includes an analysis of lesbian/gay-based school bullying experiences as they intersect with students' self-reported sexual orientation. A content review of the literature on LGB people of color from 1998 and 2007 also indicates that most literature has focused on the risk perspective rather than resilience or strengths (Huang et al., 2010). The current study aims to expand this by examining effects of lesbian/gay victimization on resources and strengths (rather than risk) for a majority Latinx sample. Furthermore, though an analysis of 2001-2002 CHKS data was conducted to reveal the pervasiveness of victimization due to actual or perceived lesbian/gay

identity (O'Shaughnessy, Russell, Heck, Calhoun, & Laub, 2004), the current analysis attempts to build upon this knowledge by examining how students' reported school support may differ by victimization and self-reported sexual orientation identity.

Additionally, the analysis attempts to investigate the potential buffering effects of school support utilizing a SEM moderation approach that simultaneously assesses the moderation of any main and interaction effects of sexual orientation identity and victimization on both psychological and academic outcomes. Most extant moderation utilizes a multiple regression approach to interpreting interaction effects, which employs a stepwise methodology, assessing these components of the analysis one at a time (e.g., Frazier, Tix, & Barron, 2004). Simultaneous entry using SEM is preferred by contemporary researchers, as stepwise regression relies on the computer program to make decisions about the significance of predictors (Kline, 2011) as well as introduces a host of methodological issues (Sribney, 2011; Thompson, 1995).

II. Review of the Literature

This chapter reviews the literature relevant to the concepts employed in the current analysis as well as the population studied. Specifically, the researcher reviews extant literature examining the experiences of LGBTQ youth, the LGBTQ minority stress model, sexual orientation victimization, mental health and academic outcomes of sexual orientation victimization, the protective role of social support, including school support, and structural equation modeling and moderation.

A. LGBTQ Students

At least one student in every high school classroom is likely to identify as LGBTQ, even if they do not do so openly (Fisher et al., 2008). Though it is difficult to estimate the proportion of high school students who self-identify as LGBTQ due to social stigma (Rotheram-Borus & Langabeer, 2001), approximately 10 to 20% of adolescents have reportedly engaged in a same-sex sexual experience (Eisenberg & Resnick, 2006; McFarland & Dupuis, 2003). Unfortunately, research has widely and substantively recognized a significant increased risk of negative mental and physical outcomes for LGBTQ youth when compared to their heterosexual and cisgender peers, including but not limited to increased suicide attempts and suicidal ideation (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009; Haas et al., 2011; Reisner, Biello, Perry, Gamarel, & Mimiaga, 2014), increased nonsuicidal self-injury (Reisner et al., 2014), increased substance use and abuse (Russell, Driscoll, & Truong, 2002), and lower self-esteem and higher depressive symptoms (Almeida et al., 2009; Galliher, Rostosky, & Hughes, 2004; Heck, Lindquist, Machek, & Cochran, 2014). In addition to poorer psychosocial outcomes, most LGBTQ youth also experience a negative school climate (56% reporting discrimination; Kosciw, Greytak, Palmer, & Boesen, 2014), facing harsher disciplinary treatment (Himmelstein & Brückner, 2011), higher rates of verbal and physical harassment, and often hearing homophobic remarks and biased language from staff and students (Kosciw et al., 2014). This school-based harassment and negative climate translates to poorer education outcomes, such as higher rates of absenteeism due to feeling unsafe at school, lower school belongingness, lower school ambition, and mistrust of school staff (e.g., Galliher et al., 2004; Kosciw et al., 2014).

B. LGBTQ Minority Stress Model

Research literature has continued to find LGBTQ youth at disproportionate risk for poor psychological and health outcomes compared to their heterosexual and cisgender peers (e.g., Haas et al., 2011; Heck, Lindquist, Macheck, & Cochran, 2014; Russell, Driscoll, & Truong, 2002). Historically, the psychiatry and psychology community framed sexual minority individuals as psychologically troubled and damaged, primarily attributing this distress to the individuals' homosexual nature (Bailey, 1999). In fact, homosexuality (i.e., same-sex attraction) was classified as a mental disorder in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* until its removal in the second edition of the DSM in 1973 (American Psychiatric Association, 1973). Today, rather than framing sexual minority individuals as inherently lacking in mental and physical health, Meyer (2003) proposed a minority stress model that explains these negative outcomes as natural consequences of the stressors LGBTQ individuals chronically endure in their forced adaptation to a dominant hostile environment that possesses homophobic values that conflicts with their core identity (see Figure 1). In other words, in accordance with one of Bailey's (1999) early proposed explanations, it is not homosexuality that negatively impacts psychological well-being, but rather "widespread prejudice against homosexual people causes them to be unhappy or worse, mentally ill" (p. 883). This discrimination does not have to be direct to have deleterious effects; victims of perceived discrimination, particularly marginalized individuals, experience negative health consequences unique to this indirect victimization (e.g., Pascoe & Smart Richman, 2009; Schmitt, Branscombe, Postmes, & Garcia, 2014).

Scholars have investigated and identified many forms of LGBTQ minority stress, ranging from internalized homonegativity to heterosexist experiences to direct sexual

orientation victimization. Cox and colleagues (2010) identified four primary sources of LGBTQ minority stress based on DiPlacido's (1998) review of the literature: (a) discrimination experiences; (b) concealment or disclosure of sexual orientation; (c) stigma consciousness; and (d) internalized homonegativity, each of which have been found to be associated with negative psychological and health outcomes for LGBTQ individuals. Specifically, higher rates of these stressors have been independently associated with higher levels of depression, general psychological distress, lower self-esteem, and greater distancing from in-group communities (e.g., Cohen & Garcia, 2005; Cox, Vanden Berghe, Dewaele, & Vincke, 2008; DiPlacido, 1998; Kelleher, 2009; Vanden Berghe, Dewaele, Cox, & Vincke, 2010). Additionally, Kelleher (2009) utilized a stepwise regression approach with a sample of 301 LGBTQ youth to demonstrate that three of these minority stressors have independent and cumulatively harmful effects on psychological well-being.

Most studies that have directly tested and found support for the minority stress hypothesis have used cross-sectional designs (Burton, Marshal, Chisolm, Sucato, & Friedman, 2013; Friedman et al., 2011; Meyer, 2013). For example, Almeida and colleagues (2009) found that in a mediation analysis of 1,032 adolescents, though LGBT youth scored significantly higher on depression symptoms, perceived discrimination accounted for this increased depressive symptomatology among LGBT males and females as well as accounted for an elevated risk of self-harm and suicidal ideation among male LGBT youth. Williams, Connolly, Pepler, and Craig (2005), also using a cross-sectional design and mediational regression analyses, found that victimization partially explained the relation between sexual minority status and externalizing behaviors for a sample of 1,598 adolescents.

A more recent study by Burton and colleagues (2013) used a six-month longitudinal

analysis of 197 adolescent youth to directly test the minority stress hypothesis, specifically assessing whether greater sexual orientation victimization mediated the relation between sexual minority status and poor mental health outcomes. Youth were recruited from two adolescent medicine clinics and sexual orientation was assessed at wave 1 using a single item. At wave 2, sexual orientation victimization was assessed using four items asking frequency of “being teased/bullied, hit/beaten up, treated unfairly, or called bad names because someone thought the participant was gay/lesbian” and depressive symptoms were measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Meditational regression analyses determined that sexual orientation victimization, a form of minority stress, explained the relation between sexual minority status at wave 1 with depression and suicidality at wave 2. A later longitudinal analysis with three six-month waves of the same participants also identified sexual orientation victimization as one of two independent indirect pathways that may explain heavy episodic drinking for sexual minority adolescents (Dermody, Marshal, Burton, & Chisolm, 2016).

Though scholars have identified several distinct forms of LGBTQ minority stress, this study’s primary focus is on discrimination experiences, particularly sexual orientation victimization, detailed below.

C. Sexual Orientation Victimization

Victimization is broadly defined as any aggressive behavior intended to harm another person (Finkelhor & Dziuba-Leatherman, 1994), though a more pointed, relevant definition describes “harms that occur to individuals because of other human actors behaving in ways that violate social norms” (Finkelhor & Kendall-Tackett, 1997, p. 2). LGBTQ students may be at an increased risk for victimization and a host of other negative outcomes due to

minority stress, but there is a distinction to be made between LGBTQ individual identity and *sexual orientation victimization* (SOV), which any student can experience regardless of self-identified sexual orientation. SOV is bullying based on sexual minority identity or perceived sexual minority identity; that is, being bullied because one is perceived as LGBTQ.

SOV and homophobic bullying is experienced throughout children's schooling, from elementary to secondary school (Kosciw et al., 2014; Plummer, 2001; Poteat, Mereish, DiGiovanni, & Scheer, 2013). Homophobic bullying is unfortunately prevalent even at the elementary school level, where less than half of elementary school teachers think LGBTQ children would feel safe at their school and homophobic language is used frequently (GLSEN & Harris Interactive, 2012). Though elementary school students do not always understand the homophobic language and bullying they use, the memories of these experiences are harmful later in life when the meaning is understood (Plummer, 2001).

While both LGB or "mostly heterosexual" girls and boys are more likely to report victimization compared to heterosexual youth, all youth can experience SOV (e.g., Berlan, Cortliss, Field, Goodman, & Bryn Austin, 2010; Katz-Wise et al., 2012). In fact, Berlan et al. (2010) found that heterosexual males were more likely to endorse SOV than gay males. Several scholars have theorized that the reason heterosexual boys may be called homophobic epithets and/or call each other by these epithets (e.g., "fag") is due to a desire to assert masculinity and punish gender non-conformity (e.g., Pascoe, 2007; Phoenix, Frosh, & Pattman, 2002) and that this occurs more often with boys than with girls, regardless of orientation (e.g., Poteat & Espelage, 2005; Poteat & Rivers, 2010). Additionally, researchers have found a larger association between SOV and being called names for boys than for girls (Poteat & DiGiovanni, 2010; Poteat & Espelage, 2005; Poteat & Rivers, 2010).

D. Mental Health and Academic Outcomes

In addition to sharing the experience of SOV, both LGB and heterosexual youth appear harmed by these experiences. Poteat and Espelage (2007) found that being called homophobic epithets leads to higher self-reported anxiety, depression, personal distress, and lower school belonging for heterosexual males and higher withdrawal for females. Additionally, heterosexual boys who are called homophobic epithets report worse psychological outcomes compared to heterosexual boys bullied by other means (Swearer, Turner, Givens, & Pollack, 2008). For LGB and questioning youth, homophobic teasing can lead to greater feelings of suicide and depression and alcohol and marijuana use (Espelage, Aragon, Birkett, & Koenig, 2008). In fact, Russell and colleagues (2011) found that sexual minority youth who experienced higher levels of victimization were 2.6 times more likely to report depression and 5.6 times more likely to attempt suicide compared to sexual minority youth who reported lower levels of victimization. A retrospective study by D'Augelli, Pilkington, and Hershberger (2002) also found that students' verbal SOV was positively associated with current trauma symptoms and psychological distress. Furthermore, LGB youth who have experienced high victimization at school also reported higher substance use, more suicide attempts, risky sexual behavior, and fear-based truancy compared to their heterosexual peers who experienced the same levels of school-based victimization (Bontempo & D'Augelli, 2002). As previously mentioned, school-based harassment can lead to poor academic outcomes such as higher rates of absenteeism due to feeling unsafe at school, lower school belongingness, lower school ambition, mistrust of school staff lower GPAs, higher dropout, and lower post-secondary education aspirations (e.g., Bontempo & D'Augelli, 2002; Galliher et al., 2004; Kosciw et al., 2014).

Though both heterosexual and LGB youth suffer negative consequences because of SOV, it is theorized that SOV may be exceptionally harmful for sexual minorities because homophobic harassment and bullying disparages a sexual minority individual's core identity (e.g., Garnets, Herek, & Levy, 1990; Poteat et al., 2011). After comparing the experiences of adults who were victims of bias-motivated violent assault compared to non-bias-motivated assault, McDevitt and colleagues (2001) found that those who were victims of crimes motivated by hate reported significantly greater intrusive thoughts, anxiety, depression, and longer and more severe psychological problems.

E. The Buffering Hypothesis

If researchers are beginning to concede that LGBTQ individuals and youth are at disproportionate risk for negative psychological outcomes and school experiences compared to their cisgender and heterosexual peers due to minority stress (Meyer, 2003), then what naturally follows is an inquiry into what could protect against these stressors. As much of the current literature focusing on support for LGBTQ students and youth has advocated for promoting a positive school climate (e.g., Fisher et al., 2008; Heck, Flentje, & Cochran, 2011; Heck, Lindquist, Machek, & Cochran, 2014; Kosciw et al., 2014; Russell, Kostroski, McGuire, Laub, & Manke, 2006; Russell, McGuire, Laub, & Manke, 2006) and family and peer acceptance (e.g., Poteat, 2011a; Ryan, Russell, Huebner, Diaz, & Sanchez, 2010; Steinberg, 2001), it behooves current researchers to investigate the potential protective effects of students' perceived social support. The buffering hypothesis proposes that adequate levels of social support can protect individuals from psychological distress in the face of negative life events, whereas those with low levels of social support will report suffering greater psychological distress because of these stressors (Cohen & McKay, 1984; Cohen &

Wills, 1985).

Cohen and McKay (1984) developed the buffering hypothesis in an era of relatively young interest in social support as a positive psychological intervention for psychopathology (e.g., Caplan, 1974; Cassel, 1974, 1976; Cobb, 1976). In their seminal chapter, Cohen and McKay (1984) asserted that social support is not merely associated with positive mental health outcomes, but can act as a protective factor given a stressful psychosocial event.

Cohen and Wills (1985) defined these events as situations “in which the person perceives that it is important to respond but an appropriate response is not immediately available,” noting that “although a single stressful event may not place great demands on the coping abilities of most persons, it is when multiple problems accumulate, persisting and straining the problem-solving capacity of the individual, that the potential for serious disorder occurs” (p. 312).

These stressful psychosocial events as described are not unlike the LGBTQ minority stressors defined by Cox and colleagues (2010), particularly sexual orientation victimization, which can accumulatively deteriorate a sexual minority youth’s mental and physical functioning over time. Cohen and McKay (1985) explain that social support may act as a protective buffer before and after a stressful event; if an individual believes that they have social resources to rely on, they may find stressful events less activating and if an individual is able to turn to a social resource for support after a stressful event, the negative effects of that event may be attenuated. Likewise, when it comes to LGBTQ youth who face a hostile school climate, knowing that there are supportive adults nearby who can intervene in the event of a victimization experience may feel empowered in that otherwise hostile climate, and those who do get bullied may feel less impacted by this threat to their identity since they have supportive adults to affirm that same identity.

Cohen and McKay (1985) reviewed social support studies through 1983 and found robust evidence for the buffering hypothesis, particularly amongst those studies that “(a) obtained a significant buffering interaction and (b) provided enough data to estimate if there was an association between support and symptomatology under low stress” (p. 348-349), which indicated that these support resources were only beneficial during high stress conditions. A more recent study validating the buffering hypothesis found that in a sample of 951 self-identified LGB youth, having an adult to talk to at school was protective against engaging in physical fights making serious suicide attempts for cyber and school bullied sexual minority youth, according to mediational logistic regression analyses (Duong & Bradshaw, 2014). According to post hoc analyses, LGB youth who had experienced both types of bullying (cyberbullying, school bullying) were 8–9 times more likely to engage in a physical fight, attempt suicide, and make serious suicide attempts compared to those who were not bullied. These risks were significantly reduced to 1.7–2.3 times more likely for those LGB youth who reported that they felt they could talk to an adult at school.

The buffering hypothesis provides an apt framework for assessing what can protect LGB youth, as the current study focuses on social support as a protective factor against the deleterious effects of various levels of minority stress (LGB status and sexual orientation victimization) and not merely a standalone predictor of positive outcomes for general youth. The following section outlines the three main domains of social support and literature findings relevant to the experiences of LGBTQ youth.

F. Social Support

Most literature studying the victimization experiences of LGBTQ youth has focused on negative outcomes and risk (Huang et al., 2010; Katz-Wise & Hyde, 2010). However, a

handful of scholars have examined the resilience and strengths of LGBTQ individuals (e.g., Anderson, 1998; Kwon, 2013; Russell & Richards, 2003). Kwon (2013) found that positive psychology constructs such as social support, hope, and optimism lead to lower reactivity to prejudice, allowing LGB individuals to persevere in the face of minority stress. Zea, Reisen, and Poppen (1999) similarly found that perceived social support is associated with lower depression and higher self-esteem for Latinx gay and lesbian individuals. Several studies that have looked at resilience for the LGBTQ population have also utilized a dual-factor model examining both positive and negative indicators of mental health, such as measuring general life satisfaction as a positive indicator and depression and suicidality as a negative indicators of mental health (Becker, Cortina, Tsai, & Eccles, 2014) or examining social well-being and psychological well-being measures along with a depression scale (Kertzner, Meyer, Frost, & Stirratt, 2009). Anderson (1998) found that young gay males reported positive self-esteem and a locus of control greater than their heterosexual peers and that this was highly correlated with perceived social support. Conversely, prospective LGBT victimization and low social support has been associated with an increased risk for suicidal ideation (Liu & Mustanski, 2012). Typically, social support for adolescents has been examined across three domains: family/parental support, peer support, and school/teacher support (Chu, Saucier, & Hafner, 2010), which are elaborated below.

Family and parental support. Though some scholars have found mixed results on the importance and protective nature of family support for LGBTQ youth compared to peer and other non-family social supports (e.g., Muñoz-Plaza, Quinn, & Rounds, 2002), many studies have found family support to have a significant protective effect and lack of family support to have a significant risk effect for LGBTQ youths' mental health and well-being. In

fact, one study found that perceived support from family was negatively correlated with suicide attempts, but that peer support had no such effect (Mustanski & Liu, 2012). Unfortunately, the same study found that one-quarter of these LGBT youth reported receiving minimal family acceptance. Additionally, LGB young adults report lower parental support than their heterosexual peers (Needham & Austin, 2010). Some scholars (e.g., Cochran, Stewart, Ginzler, & Cauce, 2002) point to low family support and negative home environments as a main reason for the higher prevalence of homelessness for LGBT youth, as these youths have a “greater likelihood of running away or being thrown out of their homes, and not because these youths are more likely to be members of a homeless family” (Corliss, Goodenow, Nichols, & Austin, 2011, p. 1686). Bidell (2014) found that LGBT-based harassment at home was significantly more predictive of psychological distress than school-based discrimination for LGBT homeless youth.

It has long been recognized that LGB youth are hesitant to disclose their sexual orientation to their family and/or parents, preferring instead to first tell a friend (e.g., D’Augelli & Hershberger, 1993). For those LGBT youths that do disclose, they are increasingly “coming out” to families at earlier ages (e.g., Savin-Williams, 2005) and these younger ages of disclosure may amplify the effect of a family’s reaction and/or acceptance on bisexual youth’s mental distress in particular (Shilo & Savaya, 2012). It is evident that many LGB youth worry about family reacting negatively to a disclosure of their sexual orientation and indeed only a third of families in one study were reported to have a positive reaction (D’Augelli, Grossman, & Starks, 2008). These positive reactions to disclosure can serve as a significant protective factor against suicidal ideation and drug use for LGB youth (Padilla, Crisp, & Rew, 2010).

When it is present, family support and family acceptance for LGB youth can significantly predict lower mental distress and higher well-being (Shilo & Savaya, 2010); fewer mental health symptoms (D'Augelli, 2002, 2003); greater self-esteem, social support, and general health; and lower depression, substance abuse, and suicidality (Ryan, Russell, Huebner, Diaz, & Sanchez, 2010). Additionally, parental support has been found to moderate the effects of general and homophobic victimization on suicidality for both heterosexual and LGB youth (Poteat, Mereish, DiGiovanni, & Koenig, 2011). Parental support continues to be important in the transition to young adulthood, as it can mitigate the odds of experiencing suicidal thoughts, drug use, and depression for LGB young adults (Needham & Austin, 2010) and depression, poor life satisfaction, internalized binegativity for bisexual college adults (Sheets & Mohr, 2009). Parental involvement and support is also important for heterosexual youth, as it is associated with greater mental health and academic achievement (O'Donnell, Schwab-Stone, & Mueeed, 2002) and can moderate the effect of victimization on mental health (Davidson & Demaray, 2007; Stadler, Feifel, Rohrmann, Vermeiren, & Poustka, 2010).

Peer support. As previously mentioned, several scholars have placed a greater emphasis on the importance of peer support for LGBTQ youth. This is likely due to many LGBTQ youth not feeling as supported by their parents and/or family (e.g., Needham & Austin, 2010); thence, these youths report that they more heavily rely on support from peers and non-family members (e.g., Muñoz-Plaza, Quinn, & Rounds, 2002). A qualitative study by Roe (2015) reaffirms LGBT adolescents' beliefs in the importance of receiving support from friends as well as their intense fear of judgment from non-LGBT peers. Perceived support from friends has been demonstrated to be a strong predictor of depressive symptoms

for lesbians (Oetjen & Rothblum, 2000) and LG adolescents (Teasdale & Bradley-Engen, 2010). Unfortunately, LG men and women may be less likely to have close friendships and/or a best friend compared to heterosexual men and women (Baiocco, Laghi, DiPomponio, & Nigito, 2012).

In addition to general peer support, cross-gender and cross-orientation friendships appear to be very beneficial to both LGB youth and their heterosexual friends. Heterosexual females with cross-orientation friendships may benefit from increased sensitivity to sexual minority perspectives and increased flexibility in thinking about sexual identity, while LB females report feeling acceptance and gaining increased self-acceptance and self-esteem (Galup & St. John, 2001). Additionally, LG men and women with cross-orientation friendships report lower levels of social anxiety (Baiocco et al., 2012). Fortunately for LGBTQ youth and their heterosexual peers, it appears that a single mutual best friend may be enough to significantly protect youth from the full effects of victimization (Hodges, Boivin, Vitaro, & Bukowski, 1999).

School support. A meta-analysis of 246 published adolescent social support studies revealed that even though there are fewer overall studies examining teacher/school support for adolescents, the social support of adult school figures appears to provide a significantly stronger effect size compared to parent and peer support when predicting adolescents' well-being (Chu, Saucier, & Hafner, 2010). Unsurprisingly, feeling connected to school and perceiving support by school staff and teachers appears to be beneficial for all students, as it is associated with less reported bullying (Espelage, Bosworth, & Simon, 2000) and more positive attitudes toward seeking help for bullying and threats (Eliot, Cornell, Gregory, & Fan, 2010). Additionally, schools with teachers and staff who report positive student-teacher

relationships possess less student-reported bullying, fighting, peer victimization and more willingness to intervene in bullying incidents (Espelage, Polanin, & Low, 2014, Rinehart & Espelage, 2016). This finding appears to span across countries and cultures; a study of middle school and high school students (sixth, eighth, and tenth grades) across 40 European and North American countries found that children with only 2-3 negative perceptions about school support were twice as likely to report being involved in bullying compared to students who reported no negative perceptions of school support (Harel-Fisch et al., 2011).

For LGBTQ youth specifically, even after controlling for sociodemographic variables, Seelman, Walls, Hazel, and Wisneski (2011) found that school engagement significantly predicted grade point average (every 10-unit increase of school engagement predicted a 0.70 increase in GPA) and feeling safe at school significantly predicted fear-based truancy (every unit increase of feeling unsafe at school predicted 0.54 more days of school absence per month). Birkett, Espelage, and Koenig (2009) also found that depression/suicidality, alcohol/marijuana use, and truancy are significantly lower for both heterosexual and LGB students given a positive school climate. One major source of school support for LGBTQ youth identified in the literature are Gay-Straight Alliances (GSAs), student-led school clubs with the purpose of advocating for LGBTQ issues within schools; LGBTQ students report feeling safer and can identify more supportive staff in schools with active GSAs (Heck, Flentje, & Cochran, 2011; Kosciw et al., 2014; Szalacha, 2003). Perceptions of adult support at school appear particularly protective for bisexual and questioning males, as it has been found to buffer the influence of SOV on school avoidance and substance use (Darwich, Hymel, & Waterhouse, 2012).

Given the fact that LGBTQ students and students who experience sexual orientation victimization are at increased risk for negative psychological and academic outcomes, as well as the fact that social support, particularly support from a school adult, possesses the ability to buffer against the negative effects of both statuses, the current study focuses on school-based social support, herein referred to as *school support*.

Defining and measuring school support. While many researchers agree that connection to school and support at school is vital for adolescent youth (e.g., Chu et al., 2010), especially LGBTQ youth (e.g., Szachala, 2003), the measurement of school-based support and connection has varied widely throughout the literature (Appleton, Christenson, & Furlong, 2008; Furlong, Froh, Muller, & Gonzalez, 2010; Jimerson, Campos, & Greif, 2003; Libbey, 2004). A review of over 50 most cited and/or relevant studies revealed that these various school-based protective constructs have been conceptualized as covering three major categories of the student experience: (a) engagement with school, (b) connection to the school community, and (c) feeling supported by individuals at the school. A detailed list of these terms, reviewed studies, and corresponding definitions and measurements, is compiled in Table 1. Similar to the methods used in Furlong et al. (2010)'s review, studies were identified by searching across all 50 Proquest databases for the exact key term appearing in the abstract, keyword, and/or title of a peer-review scholarly journal article. Oldest and top cited articles were cross-verified using Google Scholar and confirmed by the researcher to be highly relevant to the key term used.

Student engagement, also referred to as academic engagement or school engagement, is most easily separated from these other categories of school support, as it is most commonly conceptualized as students' motivation (e.g., Eggert et al., 1994) and effort

(Skinner et al., 1990) to do well in school, as measured by teacher and/or student reports of student attendance and behavior (e.g., Skinner & Belmont, 1993), emotional investment in school (e.g., Klem & Connell, 2004), or direct observation of on-task time (e.g., Anderson, 1976; Peterson & Fennema, 1985). However, the terms used to describe students' connection to the school community and connection to specific individuals at the school have a less differentiated usage in the literature. For example, while many researchers define *school connectedness*, school attachment, school belonging, and school membership as the extent to which a student feels connected or "close" to the school community, rules, and values as a whole (Becker & Luthar, 2002; Eccles et al., 1997; Libbey, 2004), some of these terms have also been operationalized as students' self-reported feelings of being supported by specific school figures such as teachers (e.g., Gottfredson et al., 1994; Jenkins, 1997; Resnick et al., 1997). On the other hand, *school support*, teacher caring relationships, and teacher support have been more consistently measured by assessing students' feelings of being supported, encouraged, and cared about by teachers, peers, and school staff (e.g., Demaray & Malecki, 2003; McNeely & Falci, 2004; Rosenfeld, Richman, & Bowen, 2000). McInerney (1991) defined school support to mean the "degree to which the child perceived a supportive environment at school, as manifested through both teacher encouragement and support and positive peer support" (p. 165).

The popularity of these terms according to the 50 Proquest databases have also varied widely over the past two decades, with *student engagement* clearly being favored over other terms as a key variable of interest, both used as an outcome and independent variable (see Figure 3). Out of the constructs encompassing connection to the school community and support by school individuals, *teacher support* appears more often in the literature, as it is

also used to describe support *for* teachers, not necessarily *by* teachers (e.g., Colbert & Wolff, 1992), while there is greater variability among the popularity of the other terms (Figure 4).

The present study utilizes the buffering hypothesis to explain how school-based supports may moderate the negative effects of victimization and minority stress. As the primary originators of the buffering hypothesis, Cohen and Wills (1985), are rooted in social and health psychology and emphasize the use of the term *social support* when referring to this buffering construct, this study will primarily use the term *school support* to refer to students' feelings of being supported by a school adult.

G. Structural Equation Modeling and Moderation

In structural equation modeling (SEM), the term “structural” refers to restricting data to a specific pattern, “equation” refers to the algebraic representation of the relations between the variables, and the “model” is the theory describing this relation being tested (McArdle & Kadlec, 2013, p. 296). To this end, multiple regression, factor analysis, path analysis, time series analysis, latent growth models, and multilevel analyses can all be considered SEM. The current study utilizes a moderated path analysis.

Path analysis. SEM path analysis has been popularized and occasionally referred to as “causal modeling,” but this is now considered a misleading and outdated expression, as “no statistical technique, SEM or otherwise, can somehow ‘prove’ causality in nonexperimental designs” (Kline, 2011, p. 8; Wilkinson & Task Force on Statistical Inference, 1999). Wright, a biogeneticist, developed path analysis to examine the effects of already established, *known* causal pathways (e.g., Wright, 1918). However, the use of path analysis today is very different; often, contemporary psychological researchers hypothesize a causal model then attempt to fit this model to actual collected data using path analysis. When

a hypothesized model fits the data well, it can be claimed that a theory is a good possibility; however, this is not confirming known, existing causal pathways the same way a biogeneticist would, nor is it known if a proposed model matches the elusory “true model.” The present study’s moderated SEM path analysis affords some confidence in whether the proposed theoretical model is viable given the large sample of collected data, but it is not possible to be confident in the *causality* and *directional truth* of these relations.

Moderation vs. mediation. The current study attempts to assess not only whether sexual orientation and SOV predict mental health and academic outcomes for adolescents, but also whether social supports significantly *moderate* this effect. Though moderation is often confused with mediation (Baron & Kenny, 1986), they are two distinct, separate concepts: mediation explains *how* and *why* a variable predicts an outcome and moderation explains *when, for whom,* and *how strong* this prediction is true (Frazier et al., 2004). We hypothesize that *all* students experiencing sexual orientation victimization are likely to suffer adverse mental health and academic outcomes and students who self-identify as a sexual minority will be more strongly affected by this victimization. In other words, the analysis tests whether the interaction between sexual orientation and SOV influences the strength of SOV. Since sexual orientation is not considered the explanation for *why* SOV occurs or *why* SOV leads to negative outcomes, it is more appropriately considered a moderator. Additionally, it is hypothesized that students’ perception of social support may buffer these negative effects; again, this buffering effect is not considered an explanation for *why* this interaction may be particularly harmful or not, merely an illustration of how students may feel *less* or *more* affected by SOV depending on how supported they feel by teachers, family, and peers. Statistically, moderation is a theoretical conceptualization of a calculated

interaction term (e.g., Kline, 2011), or an indirect effect. When these indirect effects are conditioned on one another, also known as moderated mediation, they are called conditional indirect effects (e.g., Preacher, 2007).

This study's analysis is an attempt at testing the viability of the integrated theoretical model proposed in the conceptual framework section of this paper. In other words, the current analysis seeks to understand whether significant relations exist between students' sexual orientation, SOV experience, and mental health and academic outcomes, and whether school support may moderate the effect of the interaction of these two predictors on mental health and academic outcomes. Given that structural equation modeling (SEM) aims to better understand "complex relationships between observed (measured) and unobserved (latent) variables" and "relationships between two or more latent variables" (Blokland, Mosing, Verweij, & Medland, 2013, p. 203-204; Wright, 1921), this is an ideal method for the current study.

III. Method

This chapter describes the research design utilized, the research questions posed in the study, the key characteristics of the sample, the measures used to answer the research questions, as well as the specific steps taken to review data quality and analyze the data using structural equation modeling.

A. Secondary Data Analysis Design and Procedure

The present study is a secondary data analysis design, utilizing existing California Healthy Kids Survey (CHKS) data collected by WestEd, a nonprofit research agency. WestEd administers the statewide California Health Kids Survey (CHKS) for the California Department of Education to prevent youth health-risk behaviors and promote positive development by aiding schools in making data-based decisions informed by local students' self-reported physical and mental health and school experiences. The dataset was acquired through an application process that required the researcher to (a) detail the specific analyses and research questions to be addressed by the dataset, (b) explain how the dataset will be kept confidential and secured while in possession of the researcher, and (c) describe the credentials and training of the researcher to ensure that the data are analyzed in an ethical and methodologically sound manner. Aligned with best practices for secondary data analysis, the current researcher prepared for the analysis by developing “carefully thought-out theoretical or conceptual model and a clear idea of the types of variables needed to test the model” (Greenhoot & Dowsett, 2012, p. 12).

Secondary data analysis design. Secondary data analysis is often viewed as scientifically secondary to experimental designs, due to the longstanding history of coupling research design with data analysis in psychology as well as a bias toward primary research (e.g., Cronbach, 1957; Donnellan & Lucas, 2013; McCall & Appelbaum, 1991). However, as Donnellan and Lucas (2012) point out, “there is no such thing as a perfect single study” (p. 666) and secondary data analysis is often compared to an idealized version of primary research that is not often feasible. Donnellan and Lucas (2012) even went so far as to delineate a step-by-step comparison between primary research and secondary analysis procedures, demonstrating that the main differences are how data are acquired, but not how research questions are formulated, tested, interpreted, and reported (p. 667; *see also* McCall & Appelbaum, 1991). In fact, aside from the obvious advantage of having data already collected in a secondary data analysis design, these existing data sets often afford researchers large samples, many constructs, a variety of measures, and longitudinal designs that are not usually possible for a single investigator to invest the time and resources to collect (Chase-Lansdale, Mott, Brooks-Gunn, & Phillips, 1991; Donnellan & Lucas, 2013). Additionally, these large-scale data sets, such as the CHKS, allow for researchers to study specialized subpopulations and sensitive information such as the current study’s focus on LGBTQ youth, sexual orientation, and SOV victimization experiences (Donnellan & Lucas, 2013; Greenhoot & Dowsett, 2012). Furthermore, this open-source approach to research using publicly available and/or shared datasets encourages researchers to implement best scientific practice, including conducting research in a transparent, vetted, and carefully documented manner (Donnellan, Trzeniewski, & Lucas, 2011). One potential pitfall of this open-source approach would be unknowingly producing research like other scholars using the same data

(Greenhoot & Dowsett, 2012). However, a search of the literature of published studies using the California Healthy Kids Survey data reveals that its potential to examine LGBTQ students' experiences has been underutilized; only one extant study examines school-based protective factors for LGB adolescents using a logistic regression approach and one school district's subset of the 2011 cohort data (*see Kelly, Shapiro, & Shields, 2016*).

B. Research Questions

The research questions and hypotheses to be addressed by the proposed analysis are outlined below as well as summarized in Table 2 in the Appendix.

(Q1a) *Main effect*: Do self-identified LGB students experience significantly worse academic and psychological outcomes compared to their heterosexual peers?

Hypothesis 1a: Yes, compared to heterosexual peers, self-identified LGB students will report significantly lower perceptions of school safety, lower self-reported grades, lower *School Motivation*, higher *Truancy*, and higher *Psychological Distress*.

(Q1b) *Main effect*: Do students with SOV experience significantly worse academic and psychological outcomes compared to their non-SOV peers?

Hypothesis 1b: Yes, compared to non-SOV peers, students who experience SOV will report significantly lower perceptions of school safety, lower self-reported grades, lower *School Motivation*, higher *Truancy*, and higher *Psychological Distress*.

(Q2) *Interaction*: Do self-identified LGB students who are also victims of SOV experience significantly worse academic and psychological outcomes compared to their non-SOV LGB peers and SOV heterosexual peers?

Hypothesis 2: Yes, compared to non-SOV LGB peers and heterosexual peers, LGB students who also experience SOV will report significantly lower perceptions of school safety, lower self-reported grades, lower School Motivation, higher Truancy, and higher Psychological Distress.

(Q3a) *Two-Way Moderation: Does School Support (i.e., feeling supported by a teacher or other school adult) significantly protect LGB students from negative academic and psychological outcomes?*

Hypothesis 3a: Yes, School Support will significantly moderate the negative effect of LGB status on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

(Q3b) *Two-Way Moderation: Does School Support (i.e., feeling supported by a teacher or other school adult) significantly protect students who experience SOV from negative academic and psychological outcomes?*

Hypothesis 3b: Yes, School Support will significantly moderate the negative effect of SOV on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

(Q4) *Three-Way Moderation: Does School Support (i.e., feeling supported by a teacher or other school adult) significantly protect students who self-identify as LGB and experience SOV from negative academic and psychological outcomes?*

Hypothesis 4: Yes, School Support will significantly moderate the negative effect of the interaction of LGB status and SOV on perceptions

of school safety, self-reported grades, *School Motivation*, *Truancy*, and *Psychological Distress*.

C. Participants

The 235,064 participants in this study were drawn from the California statewide secondary survey, California Health Kids Survey (CHKS) administered in 2014-2015. Sixty-seven percent of California's 58 counties (39 out of 58) are represented in this sample. Forty percent of the sample came from two counties, Los Angeles County and San Diego County, which are also the two most populated counties in California (U.S. Census Bureau, 2010). Figure 5 depicts the county concentration of LGB-identified students, which ranges from 0 to 7%, and Figure 6 displays the county concentration of students reporting SOV, ranging from 2 to 11%. Some districts reported a disproportionate amount of SOV in comparison to the number of self-identified LGB youth; for example, 11% of Placer County youth reported experiencing SOV, yet less than 1% of youth in this county self-identified as LGB. The grades, sexual orientations, and victimization status can be seen in Table 4. The descriptive statistics for key variables can be viewed by grade, sexual orientation, and victimization status in Table 5. The majority of students (89%) were seventh, ninth, or eleventh graders, given that the CHKS survey is typically administered to these grade levels each year, although schools can opt to screen beyond those grades (CHKS, 2016). Additionally, the sample is majority Latinx (56%), with a considerable portion of the students reporting a Mixed Race background (45%). These racial and ethnic demographics are comparable to total California student enrollment in 2014-2015, for which Latinx students made up 54% of total enrollment (CDE, 2015a). County representation in the survey sample ranged from 1% to 25%, the best represented counties being Santa Barbara, Santa Cruz, Imperial, Sutter and

El Dorado County (i.e., 20-25% of students enrolled in these counties in 2014-2015 are represented in the current sample; CDE, 2015b).

D. Measures

The items used in the analysis, along with their measures of origin, are described below. Table 3 in the Appendix includes a list of the items used for the analysis along with their exact wording and possible responses.

California Healthy Kids Survey (CHKS). The CHKS consists of several modules, including the Core Module, which contains items assessing a broad range of (a) youth resilience and protective factors, such as adult support, high expectations, opportunities for meaningful school and community participation and (b) risk factors and behaviors such as alcohol and substance use, school violence and safety, school harassment, and physical education and eating habits. There are also supplementary modules that cover specific areas of resilience and risk in more depth, such as the Resilience & Youth Development module, containing items and assessing peer, home, and personal resilience, and the Sexual Behavior module to assess for pregnancy and sexual health risk. The CHKS and its associated modules containing items about risk and resilience and student strengths have been psychometrically validated in several studies (Furlong, Ritchey, & O’Brennan, 2009; Hanson & Kim, 2007).

The main items used in the current analysis from the 2014-2015 cohort of the CHKS Core Module included two moderating items: a single item assessing school-based harassment due to perceived or actual lesbian/gay identity and a single item added in the 2013-2014 data collection assessing sexual orientation and transgender identity status. Additionally, several psychological indicator items, academic engagement items, and school motivation items were used from the Core Module.

Sexual orientation. The item assessing LGB status was Question A113 on the CHKS Core Module: “Which of the following best describes you?” with the options for students to select “Heterosexual,” “Gay or Lesbian or Bisexual,” “Transgender,” “Not sure,” or “Decline to respond.” Specifically, students who *only* responded “Heterosexual” to the item were coded as Heterosexual and students who *only* responded “Gay or Lesbian or Bisexual” to the item were coded as LGB for the purposes of analysis. Students who endorsed multiple conflicting responses, no endorsement of any sexual orientation responses, or the “Not sure” option were removed from the analysis, as explained in Step 3 of the Data Analysis Plan section below.

Sexual orientation victimization (SOV). The item assessing school-based harassment due to perceived or actual lesbian/gay identity is a sub-item of a larger question assessing how often within the past 12 months a student was harassed or bullied on school property and for what reason(s). The item was Question A116/A98 on the CHKS Core Module: “During the past 12 months, how many times on school property were you harassed or bullied for any of the following reasons?” with “Because you are gay or lesbian or someone thought you were” as a possible reason. Participants could respond with an interval range of incidents: *0 times, 1 time, 2 or 3 times, 4 or more times*. For the purposes of the study, a dummy variable was created to categorize students who responded “0 times” as non-SOV and students who responded either “1 time,” “2 or 3 times,” or “4 or more times” as SOV. Bullying was also defined within the survey for participants as follows: “You were bullied if you were shoved, hit, threatened, called mean names, teased, or had any other unpleasant physical or verbal things done to you repeatedly or in a severe way. It is not bullying when two students of about the same strength quarrel or fight.” This description

aligns with standard contemporary definitions of bullying, which states that behavior is considered bullying only when (a) it is repeated over time, (b) a power differential exists, and (c) it consists of physical or verbal aggression (Hamburger, Basile, & Vivolo, 2011; Olweus, 1994). When measuring bullying, many scholars provide a definition of bullying such as this one when asking individuals about their experiences (e.g., Nansel, Overpeck, Haynie, Ruan, & Schiedt, 2003).

Psychological distress indicators. Two dichotomous items were selected from both the Core Module to assess latent psychological distress. The depressive symptom item used was QA108_A97: “In the past 12 months, did you ever feel so sad or hopeless almost every day for 2 or more weeks that you stopped doing some usual activities?” The suicidality item used was QA109/V10_A109: “In the past 12 months, did you ever seriously consider attempting suicide?” Both indicators originate from the Centers for Disease Control Prevention’s Youth Risk Behavior Surveillance System (YRBSS), which has consistently provided the most comprehensive nationwide data on suicidality for youth in the U.S. (May & Klonsky, 2011). The item assessing suicidality has been found to be substantially reliable over time (Brener et al., 2002) as well as possessing convergent and discriminant validity (May & Klonsky, 2011). Additionally, strong evidence has been found to support the use of self-report of suicidal ideation (e.g., De Man & Leduc, 1994). Although the item assessing depression has been less examined in validity studies, one study established moderate reliability for this item (Brener et al., 2002).

Course grades. A single interval item was selected from the Core Module to assess students’ self-reported grades: QA11_A10 “In the past 12 months, how would you describe the grades you mostly received?” with “mostly A’s, mostly B’s, etc.” as possible answers.

For the purposes of analysis, these responses were reverse-coded so that higher values reflect higher grades. Additionally, responses were coded to reflect standard GPA values; “Mostly A’s” was coded as 4.0, “A’s and B’s” was coded as 3.5, and so forth, all in 0.5 increments ranging from 4.0 (“Mostly A’s”) to 0.5 (“Mostly F’s”). Several meta-analyses have investigated the reliability of using self-reports for grades and GPA and have concluded that while this is a common approach, self-reported grades may produce smaller effect sizes than school-reported grades when examining the links between victimization and academic achievement (Nakamoto & Schwartz, 2010) and self-reports tend to be reliable estimates of high-achieving students’ performance but less predictive of lower achieving students’ actual GPAs (Kuncel, Credé, & Thomas, 2005). However, other scholars have provided evidence that support the use of self-reported sensitive information, particularly adolescent deviant behavior (e.g., Akers, Massey, Clarke, & Lauer, 1983).

School safety. A single five-point Likert-scale item assessed how safe students felt at their school: QA18_A17 “I feel safe in my school” with responses ranging from *strongly disagree* to *strongly agree*. This item is part of four other items that comprise the School Connectedness Scale from the National Longitudinal Study of Adolescent Health (Add Health), which has been demonstrated to possess acceptable reliability and concurrent validity across sociocultural groups (Furlong, O’Brennan, & You, 2011) and has been utilized to assess students’ feelings of connection to their schools (McNeely, Nonnemaker, & Blum, 2002).

Truancy indicators. Three truancy items were selected from Core Module to assess the latent variable *Truancy*, including: two dichotomous items asking if students missed school in the past 30 days because they were QA13_A12J “behind in schoolwork or not

prepared for a test of class assignment” and QA13_A12K “bored with or uninterested in school” and one ordinal variable asking students QA12_A11 “In the past 12 months, about how many times did you skip school or cut classes?” This latent variable was deemed to measure *Truancy* versus a general *Truancy* construct, as these items are like truancy items historically used to assess student engagement, academic engagement, and school engagement (e.g., *SARAC* in Skinner & Belmont, 1993; Finn & Rock, 1997).

Inventory of School Motivation (ISM). The Effort subscale of the ISM was used to assess students’ motivated efforts in school (Ali & McInerney, 2001). This consists of the following four items, all five-point Likert scales with responses ranging from *strongly disagree* to *strongly agree*: QA19_A18 “I try hard to make sure that I am good at my schoolwork”; QA20_A19 “I try hard at school because I am interested in my work”; QA21_A20 “I work hard to try to understand new things at school”; QA22_A21 “I am always trying to do better in my schoolwork.”

School support. Six items from the Core Module were used that comprise what some scholars have referred to as a Teacher Connectedness Scale (e.g., McLaren, Schurmann, & Jenkins, 2015). Hanson and Kim (2007) explained that these items assessing CHKS resilience factors were theoretically driven by a WestEd Resilience Assessment Expert Panel based on work by Benard (1991, 1995, 2004). Originally including items to both measure caring school relationships and high expectations, in Hanson and Kim’s (2007) psychometric validation of the CHKS, they recommended combining these items into a single measurement of the construct School Support to “maximize construct validity and reduce redundancy across scales” (p. 12). These items begin with the stem “At my school there is a teacher or adult, who...” and end with the following: QA23_A22 “really cares about me”;

QA24_A23 “tells me when I do a good job”; QA25_A24 “notices when I’m not there”; QA26_A25 “always wants me to do my best”; QA27_A26 “listens to me when I have something to say”; QA27_A26 “believes I will be a success.”

E. Data Analysis Plan

The proposed data analysis utilizes Mplus Version software 7.1.4 (Muthén & Muthén, 2012-2015) to fit a structural equation model path analysis with moderation, using maximum likelihood estimation. A detailed description of the methodological components of the analysis as well as the SEM analysis steps are below and a visual path diagram of the full latent moderated model can be seen in Figure 12.

Modeling Steps of SEM. Kline (2011, p. 91-92) provides an elegant and accessible flowchart of the basic steps of SEM, which can be seen in Figure 7 of the Appendix. These are:

1. Model specification.
2. Evaluate model identification.
3. Select measures and collect, prepare, and screen the data.
4. Estimate the model:
 - a. Evaluate model fit (if poor, skip to step 5).
 - b. Interpret parameter estimates.
 - c. Consider equivalent or near-equivalent models (skip to step 6).
5. Respecify the model (return to step 4).
6. Report the results.

Step 1: Model specification. I specify the theoretical model in Figure 2. This is a recursive path analysis model because causality all flows in one direction (from sexual orientation and SOV to psychological and academic outcomes; Kline, 2011, p. 126).

Step 2: Model identification. Recursive structural models are always considered identified (Bollen, 1989, p. 95-98; Kline, 2011). Additionally, this particular model would be considered empirically identified, as data screening revealed no issues related to extreme

collinearity and the sample size of 235,064 provides more than adequate power to estimate the proposed model according to the $N:q$ rule, where N is sample size and q is number of parameters to be estimated (Jackson, 2003).

Step 3: Measures and data. The measures selected to represent the concepts outlined in the theoretical model (see Table 3 for items used) and the data were collected by WestEd from a 2014-2015 cohort of high school students across the state of California. The current researcher has taken care to screen the data to account for missing data and mischievous responders. Figure 8 presents a flowchart of the systematic elimination of problematic cases. First, 30,249 (9%) cases were deleted for participants who selected “decline” on the sexual orientation item. Then, 20,841 (6%) cases were deleted for participants who selected the “not sure” option on the sexual orientation item, as this response was interpreted to mean that the student either did not understand the item or was questioning either their sexual orientation or their gender identity. Although some researchers have chosen to interpret a response of “not sure” as indicating “Questioning” identity (e.g., Ciro et al., 2005), it is not possible to infer whether a student was marking “not sure” in response to only sexual orientation, since transgender is one of the response options for this item. A study using a similar sexual orientation item also decided to exclude students who marked “not sure” in response to sexual orientation from analysis (Almeida et al., 2009). Then, 1,612 (1%) cases were deleted for participants who selected multiple sexual orientation identities (e.g., students who selected both “Heterosexual” and “Lesbian, Gay, or Bisexual”), as the current study focuses on the specific experiences of self-identified Heterosexual and LGB students. The next cases removed were 48,843 (15%) participants who did not respond at all to the sexual orientation items. Additionally, 4,485 (1%) additional cases were removed

according to WestEd's *reject* variable, an index of students' responses to erroneous items that act as validity checks as well as inconsistent responses. Students are assigned points on the *reject* variable for: (a) indicating that they reported using *Derbisol*, a fictitious drug; (b) indicating they had not answered questions honestly; and (c) providing inconsistent responses for use of the same drug (i.e., endorsing drug use the last 30 days *and* no lifetime drug use).

Lastly, a sensitivity analysis was conducted using a count-based screener-indexing approach recommended by Robinson-Cimpian (2014) to account for mischievous responders. This approach attempts to screen out those youths who provide extreme, unusual responses by aggregating students' positive responses to several sets of items that have a low frequency of endorsement and creating a count-based low-frequency response-probabilities index. This approach was originally employed by Robinson and Espelage (2011) and is particularly important to utilize when examining sensitive populations (i.e., sexual and gender minorities), and risk information (i.e., suicidality, SOV), as the final analysis outcomes may be heavily influenced by mischievous responses (Robinson-Cimpian, 2014). The difference between this type of sensitivity analysis and typical validity checks such as the one employed by WestEd's *reject* index is that these low-frequency items are legitimate and allow students to exaggerate their responses; while any of these given items may be true for a student, a pattern of endorsement across these items would likely be "mischievous."

To mirror the sensitivity analysis of Furlong, Fullchange, and Dowdy (2017) who identified mischievous responses in a California-based school population with similar mental health and behavior, items were selected based on legitimacy and low-frequency and responses were coded as "unusual" if they were endorsed by less than 5% of the overall

sample (see Table 6 for screener items). A count-based mischievous response index was calculated by summing the amount of mischievous responses for these six items, with a possible range of 0 to 6. Cell sizes across the range were then compared across Heterosexual, LGB, Transgender, SOV, and non-SOV groups (see Table 7), which determined that mischievous responders were disproportionately represented within the LGB, Transgender, and SOV groups, potentially affecting the final analysis. Given this, and according to Furlong et al.'s (2017) recommendations, those cases with a Mischievous Response Index of two or more were eliminated, resulting in a deletion of 25,565 (7%) and a final sample size of 235,064.

In addition to the data screening procedures, missing data were also considered according to best practices outlined by Enders (2010), utilizing a multiple imputation and bootstrap approach that comes standard in the maximum likelihood estimation used by the Mplus software. Thus, the total sample number of 235,064 includes all cases after deletion but before multiple imputation and potential case deletion by Mplus during the estimation process. The total final sample is described in the Findings section of Chapter 4.

The current data are also a fit for this method as SEM requires large samples (Kline, 2011) and in fact certain journal reviewers are reported to reject studies with samples of less than 200 (Barrett, 2007). The sample size for the present analysis $N = 235,064$ provided more than adequate power to detect any proposed effects.

Step 4: Estimate the model. As is default in most SEM programs (Kline, 2011), the maximum likelihood (ML) estimation was used for this analysis, meaning that the model parameters generated are estimates that maximize the likelihood that the observed data are drawn from the theorized “true” population. All model parameter estimates are calculated

simultaneously, making ML estimation a “full information method” (Kline, 2011, p. 155), which is considered a benefit of ML over the least-squares estimation popularized by psychological research (Myung, 2003). ML estimation is so preferred in the SEM context that some scholars argue that using an estimation method other than ML requires explicit justification (Hoyle, 2000). In order to obtain traditional fit statistics for a comparison Model 0, robust weighted least squares (WLSMV) estimation was used for the purposes of evaluating model fit, which is explained below.

Typically, structural equation model fit is assessed using Hu and Bentler’s (1999) cutoff criteria of (a) non-significant chi-square test of model fit value (χ^2) at the .05 alpha level, (b) a root-mean-square error of approximation (RMSEA; Steiger & Lind, 1980) and 90% confidence interval (CI) close to .06 or below, (c) a standardized root-mean-square residual (SRMR) close to .08 or below, and (d) a comparative fit index (CFI; Bentler, 1990) and Tucker-Lewis index (TLI; Tucker & Lewis, 1973) close to .95 or greater. However, this study utilizes a latent moderator, *School Support*, which is estimated in Mplus without traditional fit indices (Maslowsky, Jager, & Hemken, 2015). Thus, fit was assessed using the latent moderated structural equations method (LMS) guidelines proposed by Klein and Moosbrugger (2000) and Maslowsky and colleagues (2015). The steps can be summarized as first (a) estimating a measurement model and evaluating fit indices according to traditional Hu and Bentler (1999) criteria, (b) estimating the structural equation model without the latent interaction (Model 0), (c) estimating the structural equation model with the latent interaction term (Model 1), (d) comparing the fit of Model 0 and Model 1 using a log-likelihood ratio test (Gerhard et al., 2015; Satorra & Bentler, 2010), and then (e) analyzing significant interactions by graphing standardized coefficients (Dawson, 2014; Klein & Moosbrugger,

2000; Maslowsky et al., 2015). Model 0, the structural equation model without the latent moderator interaction was estimated using WLSMV estimation to evaluate model fit. Model 0 was then estimated again with using maximum likelihood in order to compare log-likelihood values for Model 0 and Model 1. Model 1 could not be estimated using WLSMV for direct comparison of fit indices due to the analysis requirements of the latent moderator interaction. After determining adequate fit for Model 0, fit for Model 1 was compared using a log-likelihood ratio test. The raw H_0 log-likelihood values were used, as using these raw uncorrected values are believed to produce better than other robust difference tests proposed by Satorra and Bentler (2001) and (2010) according to a recent simulation study conducted by Gerhard and colleagues (2015). Unlike many chi-squared log-likelihood ratio tests, a significant finding from the log-likelihood ratio tests (e.g., $p < .001$) indicates support for the alternative Model 1, as a significant log-likelihood ratio test “represents a significant loss of fit relative to the alternative model” (Maslowsky et al., 2015, p. 6).

Step 5: Respecify the model (return to Step 4). This step is usually only completed if the initial model is unidentified, produces poor fit, and/or does not converge (Kline, 2011). Any respecification must be rationalized theoretically. The current study does not anticipate the need for respecification, as measurement models have been tested before the final model specification.

Step 6: Report the results. There are several existing guidelines for reporting the results of SEM analyses (e.g., Boomsma, 2000; Kline, 2011; Schreiber, Nora, Stage, Barlow, & King, 2006; Thompson, 2000). After determining whether the hypotheses regarding significant main and interaction effects were supported, significant interactions were probed

by estimating conditional effects for each interaction term and comparing the conditional effects to one another, testing for significant differences between each effect.

IV. Findings

This chapter describes the results of the analysis, including the descriptive statistics for the sample, evaluation of the model, whether or not the researcher's hypotheses 1-4 were supported, and a summary of the overall results.

A. Descriptive Statistics

Descriptive statistics were obtained using SPSS Version 21 and can be seen in Tables 4 and 5. A simple odds ratio calculation indicates that self-identified LGB students were 17.13 times more likely to report SOV compared to heterosexual students, which is a statistically significant difference between the groups ($z = 132.46, p < .001$).

B. Model Fit

Evaluating the outcome measurement models. To achieve a more parsimonious model and aid with interpretation of the results, an exploratory factor analysis (EFA) was conducted on 40% of a separate random sample of the dataset to determine if the suggested outcome indicators could be represented by the latent constructs *Psychological Distress*, *School Motivation*, and *Truancy*. As the Grades and School Safety items did not reliably load onto factors when conducting the EFA, they were dropped from the analysis and the EFA was re-run without these variables. Results of the EFA solutions can be seen in Table 8. Though the four-factor solution produced the best model fit statistics according to Hu and Bentler's (1999) model fit assessment guidelines, as seen in Table 8, there were no adequate standardized loadings on the fourth factor. Thus, the three-factor solution was chosen as ideal due to adequate and substantively valid constructs (Table 9). A confirmatory factor analysis

(CFA) was conducted on the remaining 60% of the random separate sample, which produced adequate fit and good factor loadings (above .30; see Figure 9), indicating that these items could represent the latent constructs *Psychological Distress*, *School Motivation*, and *Truancy*, with Grades and School Safety remaining as single observed outcome variables. McDonald's (1999) total omega (ω_t) was also calculated to assess internal consistency for the items loading onto each factor, as this coefficient is touted as more accurate compared to other reliability estimates (Revelle & Zinbarg, 2009; Sijtsma, 2009; see Table 11). However, it should be noted that this measurement of internal consistency is only appropriate for examining the interrelatedness of the items loading onto the *School Motivation* and *Psychological Distress* factors, as the possible item responses for the *Truancy* differ significantly. Indeed, *School Motivation* produced a strong omega ($\omega_t = .87$) whereas *Psychological Distress* produced a slightly weak intercorrelation ($\omega_t = .60$), likely due to the fact that the factor consists of only two binary items (Sijtsma, 2009) and that *School Motivation* is a previously established scale (Ali & McInerney, 2001).

Evaluating the moderator measurement model. A CFA was also conducted on the entire sample in order to evaluate the measurement model for the latent moderator *School Support*. As seen in Table 8, the measurement model produced good fit across all indices and all items loaded above .30 onto the *School Support* factor, indicating that these items are may be adequately represented by the overall latent moderator *School Support*. Figure 10 displays the standardized factor loadings and disturbances for the latent moderator. McDonald's total omega also indicated strong internal consistency for the items loading onto *School Support* ($\omega_t = .89$; see Table 12).

Evaluating Model 0 and Model 1. The fit statistics obtained for Model 0 and Model 1 can be seen in Table 13 and the resulting path models with standardized regression coefficients can be seen in Figures 11-12. Model 0's fit statistics using WLSMV estimation indicated adequate fit across all indices (see Table 13). After determining adequate fit for Model 0, fit for Model 1 was compared using a log-likelihood ratio test. The significant result of the log-likelihood ratio test indicates that there is a significant loss in fit for Model 0 relative to the more complex Model 1, providing support that the study's full SEM model is well fit (Maslowsky et al., 2015). Overall, Model 1 explained 2.5% of the variance in grades, 13.4% of the variance in school safety, 5.4% of the variance in *Truancy*, 16.1% of the variance in *School Motivation*, and 14.3% of the variance in *Psychological Distress*. Compared to Model 0, Model 1 explained 2.8% less of the variance in grades, 0.03% less of the variance in school safety, and 0.01% less of the variance in *School Motivation*. However, Model 1 explained 0.9% more of the variance in *Truancy* and 1.2% more of the variance in *Psychological Distress*.

C. Hypothesis 1a (Main Effect): Compared to heterosexual peers, self-identified LGB students will be significantly more likely to report lower perceptions of school safety, lower self-reported grades, lower School Motivation, higher Truancy, and higher Psychological Distress.

The regression results of the model (seen in Table 14) indicate that this hypothesis is supported across all academic and psychological outcome variables, meaning that self-identified LGB students were significantly more likely (at the $p < .001$ level) to report lower grades, lower school safety, lower *School Motivation*, higher *Truancy*, and higher *Psychological Distress* compared to their heterosexual-identified peers.

D. Hypothesis 1b (Main Effect): Compared to non-SOV peers, students who experience SOV will be significantly more likely to report lower perceptions of school safety, lower self-reported grades, lower School Motivation, higher Truancy, and higher Psychological Distress.

Similar to the previous hypothesis, a main effect was found for SOV, indicating that students who report SOV are significantly more likely (at the $p < .001$ level) to report negative outcomes across all academic and psychological variables, with the exception of grades, for which there was no significant effect. In other words, SOV is associated with a significant decrease in feelings of school safety and *School Motivation*, and a significant increase in *Truancy* and *Psychological Distress*.

E. Hypothesis 2 (Interaction): Compared to non-SOV LGB peers and heterosexual peers, LGB students who also experience SOV will be significantly more likely to report lower perceptions of school safety, lower self-reported grades, lower School Motivation, higher Truancy, and higher Psychological Distress.

This hypothesis was partially supported; although significant interaction terms were found for all outcomes except for grades, several of the findings differed slightly from what was originally predicted and in fact demonstrated that SOV appeared to negatively significantly impact heterosexual students but did not always moderate LGB students' outcomes. An examination of these interactions using simple slopes can be seen in Figure 13 and comparisons of the conditional effects are in Table 15. The significant results are described below for each outcome and potential explanations for these interesting findings are discussed in the next chapter.

LGB students who experienced SOV reported lower (-0.481) school safety compared to LGB students without SOV (-0.187), and heterosexual students with (-0.333) and without SOV (0.033). However, a comparison of the conditional effects indicated that heterosexual students' decline in school safety when reporting SOV was statistically greater than LGB students' decline when reporting SOV, suggesting that within groups, heterosexual students may be more impacted by SOV compared to LGB students for feelings of school safety. For *School Motivation*, although LGB students overall reported significantly lower *School Motivation* compared to heterosexual peers, SOV did not moderate *School Motivation* for LGB students (-0.255 versus -0.256), whereas heterosexual students were significantly negatively impacted by SOV (-0.078 with SOV, <0.001 without SOV; see Figure 13, Table 15). Findings were similar for *Truancy*, for which LGB students reported significantly higher overall *Truancy* compared to heterosexual students, but LGB students' *Truancy* did not appear to be moderated by SOV, while heterosexual students with SOV reported significantly greater *Truancy* compared to heterosexual students without SOV (0.068 with SOV, < 0.001 without SOV; see Figure 13, Table 15). Lastly, SOV significantly moderated both LGB and heterosexual students' reports of *Psychological Distress*, although the effect of SOV appeared significantly greater for heterosexual students than LGB students (an added effect of 1.644 for LGB students versus 2.187 for heterosexual students).

F. Hypothesis 3a (Two-Way Moderation): School Support will significantly moderate the negative effect of LGB status on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

Although a main effect was found for *School Support* significantly predicting outcomes, *School Support* was only found to significantly moderate the effect of sexual

minority status on grades ($p < .05$), *Truancy* ($p < .001$), and *Psychological Distress* ($p < .001$). Thus, *School Support* did not appear to significantly moderate LGB students' grades, sense of school safety, or *School Motivation*. As described in the results below, conditional effects testing and simple slope probes (Figure 14, Table 15) indicated that *School Support* appeared to be a stronger moderator for certain groups of students depending on the outcome, the potential explanations for which will be discussed in the next chapter.

For grades, the moderating effect of *School Support* was significantly greater for heterosexual students (1.119 difference for +/- 2 SD) compared to LGB students (0.873 difference for +/- 2 SD). The same was true for *Truancy*, for which *School Support* had a statistically greater moderating effect at the +/- 2 SD level for heterosexual students (-0.594) than for LGB students (-0.351). Lastly, *School Support* was significantly more protective for heterosexual students' *Psychological Distress* (-2.418 difference for +/- 2 SD) than for LGB students (-1.747 difference for +/- 2 SD). Thus, while *School Support* significantly moderated negative outcomes for both groups of students, it had a stronger moderating effect for heterosexual students' grades, *Truancy*, and *Psychological Distress*.

G. Hypothesis 3b (Two-Way Moderation): School Support will significantly moderate the negative effect of SOV on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

Although *School Support* alone significantly predicted outcomes, *School Support* only significantly moderated the effect of SOV on *School Motivation* and *did not* significantly moderate the effect of SOV on grades, school safety, *Truancy*, or *Psychological Distress*. Specifically, *School Support* appeared to significantly moderate for both students with and without SOV, but had a greater significant conditional effect at the +/- 2 SD level

for students without SOV (1.639) compared to students with SOV (1.480; see Table 15 and Figure 15).

H. Hypothesis 4 (Three-Way Moderation): School Support will significantly moderate the negative effect of the interaction of LGB and SOV on perceptions of school safety, self-reported grades, School Motivation, Truancy, and Psychological Distress.

A significant three-way interaction was found between sexual orientation, SOV, and *School Support* for *Psychological Distress*, but not any of the other outcome variables. This indicates that the analysis only supported the hypothesis that *School Support* would significantly buffer victimized LGB students' *Psychological Distress* but did not support the hypothesis that negative effects would be buffered for school safety, grades, *School Motivation*, or *Truancy*. Examining the simple slopes (Figure 16) and conditional effects (Table 15) for this interaction indicated that increased *School Support* is significantly associated with a decrease in *Psychological Distress* for both LGB students with SOV and heterosexual students without SOV, but that the moderation for heterosexual students with SOV and LGB students without SOV is more complex. Specifically, LGB students without SOV reported significantly lower *Psychological Distress* (2.794) compared to heterosexual students with SOV (3.021) when *School Support* was low (-2 SD), and significantly higher *Psychological Distress* (1.260) compared to heterosexual students with SOV (0.813) when *School Support* was high (+2 SD). These findings indicated that LGB students with SOV reported highest *Psychological Distress* overall, followed by LGB students without SOV and heterosexual students with SOV, and heterosexual students without SOV reported the lowest *Psychological Distress*. The results also indicated that although *School Support* significantly

moderated the negative effects of sexual minority status and SOV, LGB students still appeared to fare the worst compared to heterosexual students at higher levels of *School Support*, and that *School Support* did not have a strong enough moderating effect to neutralize the *Psychological Distress* experienced by LGB students and heterosexual students with SOV.

I. Summary of Findings

Each predictor played an important role in predicting positive or negative outcomes for youth. Both sexual minority status and SOV significantly predicted negative academic and psychological outcomes, while *School Support* predicted positive academic and psychological outcomes. SOV appeared to affect LGB and heterosexual students differently by outcome; although LGB students reported worse outcomes overall, the negative impact of SOV was significantly greater for heterosexual students' reports of school safety, *School Motivation*, *Truancy*, and *Psychological Distress*. Additionally, *School Support* appeared to significantly moderate the effects of SOV for *School Motivation* and the effects of sexual minority status for grades, *Truancy*, and *Psychological Distress* and the effects of SOV on *School Motivation*. However, the strength of this moderation also differed by group; *School Support* had a significantly stronger protective effect on heterosexual students' grades and *Psychological Distress*, on LGB students' *Truancy*, and on non-SOV students' *School Motivation*. Lastly, a significant three-way interaction was found between sexual orientation, SOV, and *School Support* for *Psychological Distress*, indicating that *School Support* buffered each group from *Psychological Distress*, although it appeared to have a greater buffering effect for heterosexual students in comparison to LGB students, particularly comparing LGB students without SOV to heterosexual students with SOV.

V. Discussion

This final chapter discusses the key findings, potential explanations for noteworthy results, limitations of the current study, future directions for research, and explores the study's implications for researchers, schools, and public policy.

A. *Key Findings*

The current study explored whether feeling supported by an adult at school protects youth from various negative academic and psychological outcomes, particularly for those youth who both self-identify as LGB and experience sexual orientation victimization. The results provide mixed evidence for this assertion, suggesting that, unsurprisingly, feeling supported by an adult at school is significantly protective for *all* youth, and that SOV and LGB status alone are associated with significantly poorer outcomes, but that school support moderates these effects differently for each group of students. Additionally, the results provided evidence that sexual orientation victimization is significantly more harmful for youth who self-identify as heterosexual, contrary to what was originally hypothesized. Ultimately, sexual orientation victimization, sexual minority status, and school-based support are such significant predictors of youth outcomes on their own that the interaction of these is complex and adds a layer of interpretation when considering unique student experiences but otherwise does not disprove the notion that LGB and victimized youth are experiencing significantly worse outcomes, and school-based support is critical for all youth. Additionally, victimization harms all youth, and how that victimization is experienced is complex.

Key Finding #1: Sexual minority status and sexual orientation victimization each independently significantly predict negative academic and psychological outcomes for youth, particularly *Psychological Distress*. These findings reiterate extant literature

indicating that LGB students report significantly worse outcomes than heterosexual students (e.g., Espelage et al., 2008) and that sexual orientation victimization is harmful for all students (e.g., Haas, 2011). Recent studies have found that perceived burdensomeness, the belief that one is a burden to family or society (Van Orden, Witte, Gordon, Bender, & Joiner, 2008) may explain these increased depressive symptoms and suicidality in both LGB youth and youth affected by SOV. Specifically, they have found that adolescents' perceived burdensomeness accounted for a significant portion of the association between SOV (Baams, Grossman, & Russell, 2015) or sexual orientation (Hill & Pettit, 2012) and depression. Additionally, although LGB identity itself is not believed to cause negative outcomes, minority stress uniquely related to this sexual identity may explain these increased negative outcomes (Meyer, 2003), as 57% of LGB attempters reported their attempts to be at least somewhat related to sexual orientation (D'Augelli, Hershberger, & Pilkington, 2001). Thus, is it possible that both youth with a sexual minority identity and youth that experience SOV are at an increased risk of feeling they are burdensome, which then increases their risk of feeling depressed and suicidal according to the interpersonal-psychological theory of suicide (Van Orden et al., 2008). Regardless, the current study's findings support the minority stress model's assertion that stressors associated with sexual minority status alone may perpetuate significant discrepancies in psychological outcomes between LGBTQ and heterosexual individuals (Meyer, 2003).

Key Finding #2: Feeling supported by an adult at school significantly predicts both positive academic and psychological outcomes *and* explains more variance than either sexual minority status or SOV alone. The current study's findings suggest that regardless of a child's individual experiences or identities, feeling supported by an adult at

school is paramount to that child's psychological well-being and academic success.

Additionally, the bolstering effect of this support is much more powerful in uplifting children than their experiences of minority stress or homophobic bullying are in hurting them. This result speaks to the powerful promotive effect, rather than protective effect, of school-based adult support on all youth, which has been repeatedly established throughout literature. This relation between social support and well-being in children and adolescents was thoroughly examined in Chu, Saucier, and Hafner (2010)'s meta-analysis of 246 studies, which found that teacher and school personnel support produced the strongest positive effects on youth's psychological and academic well-being compared to other sources of social support.

Key Finding #3: LGB students report the worst outcomes, but SOV harms heterosexual-identified students at a greater magnitude than LGB-identified students.

SOV was found to significantly impact heterosexual students' school safety, *School Motivation*, *Truancy*, and *Psychological Distress*, even more so than for LGB students.

Additionally, SOV did not appear to significantly impact LGB students' *School Motivation* or *Truancy*. This is not to say that SOV did not harm LGB students, as LGB students

reporting SOV still reported the worst academic and psychological outcomes (see Table 5)

and LGB students still reported a significantly higher proportion of SOV compared to

heterosexual students (45% versus 5%; see Table 4). Although this finding was contrary to

the original hypothesis that SOV may be more harmful for self-identified LGB students when

considering SOV as an attack on a core identity, it may speak instead to the potentially

“greater resilience” of LGB students in facing these types of adverse experiences compared

to heterosexual students. Similar to how the “experiences of oppression have required people

of color to sharpen and hone their survival skills to such a degree that these skills are now

deemed to be assets” (Constantine & Sue, 2008, p. 235), LGB students may harbor strengths and coping strategies to address homophobic bullying that are under-examined by researchers. Since LGB students still reported the worst academic and psychological outcomes compared to both SOV and non-SOV heterosexual students, it is also possible that there are key facets of minority stress experienced by these LGB students that could not be captured by the current study. In other words, direct SOV may be a lesser event for LGB-identified students than heterosexually identified students compared to other forms of minority stress (e.g., family rejection, perceived burdensomeness, internalized heterosexism), or may merely be only one facet of a cumulative minority stress experience. There may also be other contextual elements of heterosexual SOV experience not captured within the current study, such as whether these victimized heterosexual students are more likely to be targeted and be vulnerable to other stressors not measured. Furthermore, this finding reiterates the notion that although homophobic bullying harms all youth, it can be particularly detrimental for heterosexual youth, especially compared to other types of bullying experienced by these youth (Swearer et al., 2008). Altogether, this speaks to a greater need to focus on how SOV negatively impacts all children and how the narrative should be shifted from needing to protect vulnerable LGBTQ students to needing to challenge schoolwide heteronormative practices and homophobic biases that harm all children, heterosexual and not (Bryan & Maycock, 2017; Payne & Smith, 2013).

Key Finding #4: *School Support* significantly moderates *Psychological Distress* for all groups of students, but has stronger protective effects for heterosexual non-SOV and heterosexual SOV students. Although heterosexual students in this sample were negatively affected by SOV at a greater magnitude compared to LGB students, this does not

negate the finding that both SOV and non-SOV LGB students reported greater *Psychological Distress* than their heterosexual counterparts even at high levels of *School Support*. The only instance in which heterosexual students reported higher *Psychological Distress* was in the context of low (-2 SD) *School Support* comparing heterosexual students with SOV to LGB students without SOV (0.813 vs. 1.260; see Table 15). However, given that adult support and school connectedness are vital in buffering against the negative psychological impact of SOV (e.g., Chu et al., 2010; Duong & Brandshaw, 2014), how is it that heterosexual students appear to benefit the most from this type of support? The answer may lie in the cumulative advantage/disadvantage phenomenon (CAD; Dannefer, 2003; DiPrete & Eirich, 2006) in which individuals with resources are better positioned to acquire and benefit from further resources, in turn perpetuating inequality (i.e., “the rich get richer, the poor get poorer.”) In other words, given heterosexual students’ privilege of identifying with a sexuality that is socially and culturally reinforced both within and outside of their school, these students may already be at an advantage to receive and benefit from support from adults at their school. Although SOV appeared to have a larger negative within-group effect for heterosexual students, even those with SOV still reported better outcomes than their LGB counterparts, and adult support on top of this is likely to provide a powerful bolstering effect. If we believe that heterosexual students experience a cumulative advantage in benefitting from support from adults at school who are likely to reinforce heteronormative values, this further underlines the need to address heteronormative bias at a school system level (Payne & Smith, 2013).

While it is imperative for LGB youth to feel supported by adults and other individuals in their lives, the support reported by the youth in this study may or may not reflect LGBTQ-

affirming support, as neither students' perceptions of school adults' attitudes toward LGBTQ individuals nor students' levels of "out-ness" were assessed. It is likely that school support may be more effective in buffering against psychological distress resulting from SOV if LGB youth also believe that these adults support their sexual identity, as sexuality-specific social support has been found to be effective in decreasing emotional distress (Doty, Willoughby, Lindahl, & Malik, 2010). Otherwise, LGB youth may feel that adults at school support them in spite of or in ignorance of their sexual minority identity; this is a minority stressor not experienced by heterosexual students, as they likely do not question adults' affirmation of their sexual identity. Given that less than half of teachers reported engaging in LGBTQ-related support efforts (49.7%) and less than a third reported providing LGBTQ-related support to individual students (28.1%) according to a national climate survey (Greytak, Kosciw, Villenas, & Giga, 2016), it is not farfetched to assert that LGBTQ youth may doubt their teachers' support of their sexual identity or willingness to provide support in the context of SOV.

B. Limitations

The current study possesses a number of limitations to its generalizability, measurement, and interpretability. First, although the study possessed a robust sample size of 235,064 students, the participants were limited to the state of California in the United States. Additionally, not all of the California counties were represented and only 7% of the state's total sixth through twelfth graders enrolled in 2014-2015 were represented, according to CDE (2015b) enrollment data. However, as all California schools take the survey every two years, this does limit selection bias, and the large sample size lends to the generalizability of this study.

The sample was also majority Latinx-identified, and the way the CHKS assesses race/ethnicity may fail to capture meaningful, true dimensions of racial and ethnic identity. Specifically, the students were first asked, “Are you of Hispanic or Latino Origin?” and then were asked, “What is your race?” with only the following response options available: “American Indian/Alaskan Native, Asian, Black or African American, Native Hawaiian or Pacific Islander, White, and Mixed (two or more races).” Some Latinx youth may not feel that their race is represented appropriately by these given options and separating Hispanic/Latino identity from these choices may cause confusion and alienation (Smith, Woo, & Austin, 2010). Additionally, due to the fact that the majority of the sample was Latinx, the study’s findings may not be generalizable to other groups less represented in the sample, as their experiences may not be as robustly captured.

The current study is also limited in its measurement of the constructs discussed. This is to be expected, given that the research was limited to the items and measurements administered by the statewide data collectors, as is common in secondary data analysis designs. First, sexual orientation identity was assessed by a single “check all that apply” item that conflated sexual orientation with gender identity by including “Transgender” as an option. Sexual orientation is best measured using a multidimensional scale that takes into account sexual behavior, sexual attraction, and sexual identity (Saewyc et al., 2004). Additionally, it was unfeasible to include a group of Questioning-identified students, as this was not a sexual orientation option. The “not sure” response option for the sexual orientation items introduced some doubt into whether participants were responding that they were questioning their sexual orientation, that they did not understand the item, or that they were questioning their gender identity. Furthermore, qualitative evidence suggests that LGBTQ

people categorize hate-based victimization differently and often change their attribution of victimization, and thus the single sexual orientation victimization item used in the analysis may be excluding some sexual orientation victimization experiences (Herek, Gillis, Cogan, & Glunt, 1997). Lastly, the *Psychological Distress* indicators were limited to two dichotomous items, one assessing whether a certain set of depressive symptoms was present in the past 12 months and another assessing whether a serious suicidal intent was present for the past 12 months. These indicators only captured a small snapshot of symptoms related to psychological distress, which is better measured with a comprehensive and psychometrically validated instrument such as Behavior Assessment System for Children (BASC; Kamphaus & Reynolds, 2015).

Moreover, while both positive (e.g., school motivation) and negative (e.g., truancy) academic outcomes were examined, only negative psychological outcomes were assessed. As the majority of literature studying victimization experiences of LGBTQ youth has focused on negative outcomes and risk (Huang et al., 2010; Katz-Wise & Hyde, 2010), this has perpetuated a “suicide consensus” that all LGBTQ youth are at higher risk for mental health difficulties (Bryan & Maycock, 2017), which runs the risk of promoting “heteronormativity by implying that heterosexual lives are free from gendered violence and suffering and by obscuring the profound forms of queer joy that accompany and sometimes compensate for queer suffering” (Ward, 2011). A dual-factor model taking into account both psychological wellbeing and distress provides a more complete picture of mental health functioning, as the absence of distress does not necessarily indicate wellbeing (e.g., Antaramian, Huenber, Hills, & Valois, 2010; Suldo & Shaffer, 2008).

Additionally, although the researcher took care to conduct a Robinson-Cimpian (2014) sensitivity analysis to detect and remove mischievous responders, the nature of the self-report data involved in this study contains sensitive information and may be vulnerable to social desirability bias (Huang, Liao, & Chang, 1998), mischievous responses, and misreporting or underreporting due to stigma (Tourangeau & Yan, 2007). Thus, it is possible that there are some participants who were included in the analysis who did not truly self-identify as LGB and/or participants who were excluded who did identify as LGB but did not report this on the survey. However, the present study's robust amount of data quality checks used in the data cleaning process are greater than most extant literature reporting similar data, lending validity to the present study.

Lastly, the cross-sectional and nonexperimental design of the study limits the researcher's ability to make causal inferences about the role of the predictors in producing negative academic and psychological outcomes. For example, it is impossible to determine whether the SOV experience occurred before or after academic grades were accrued, psychological distress was experienced, and so on. Additionally, without qualitative data such as cognitive interviewing, the researcher cannot confirm what direct links and causal mechanisms, if any, exist between a student's self-reported sexual orientation and sexual minority experience and the resulting negative outcomes found in the study.

C. Future Directions

The limitations and key findings of the study precipitate specific recommendations to expand and improve upon the current study.

Replication. By including the specific questionnaire items, missing data analysis, and exact data cleaning procedures in line with the recommendations of Schilling, Kozak,

Lundahl, and Dellavalle (2006), it is the current researchers' hope that this study may be easily replicated using a similar dataset with a later cohort and/or other nation- and state-wide datasets (e.g., Youth Risk Behavior Surveillance System; CDC, 2018). Following the "Replication Recipe" recommended by Brandt and colleagues (2014), a future study should specify the precise effect(s) intended to replicate, follow the exact methods, obtain sufficient statistical power, make all details about the replication available, and compare the replication results critically to the results of the current study. Ironically, given the current study's large sample size, a first step in replication may be to utilize a smaller subset of the same sample to replicate the results while minimizing statistical overpowering that may be present in a large-scale sample when examining infrequently endorsed items (Crosby & Rothenberg, 2003).

One of the more interesting conditional effects to replicate in future studies would be the differing magnitude of the negative effect of SOV on heterosexual and LGB-identified youth as well as the differing magnitude of the buffering effect of *School Support* on this interaction for these student groups. Replicating the study across later cohorts using the same survey would allow researchers to infer any trends related to the increase/decrease of SOV, LGB-identification, and the impact of these predictors on the academic and psychological outcomes examined. Longitudinal data spanning at least five years would allow the researchers to capture patterns and developmental trajectories similar to the work done by Becker et al. (2014) and Burton et al. (2013), which could better establish causality and point to SOV as a predictor of long-term mental health disparities. Multi-cohort CHKS data is available, but as it is de-identified, within-subject comparisons are not currently possible. However, general trends and trajectories (not subject-linked) may be inferred by comparing cohorts across the years.

Furthermore, replicating the study across other state- and nation-wide datasets would enable researchers to determine which effects are generalizable to the greater population of LGB students across the country and which may be regionally (and thus culturally) bound. These studies may also directly inform region-specific recommendations for school, community, and public policy. Continuing to utilize these normative, representative samples that include both heterosexual and LGBTQ youth, both normative and atypically developing youth, allows researchers to continue comparing these groups as well as more accurately measure the proportionality of experiences compared to using only clinical or support group samples (Savin-Williams & Joyner, 2007).

Improve identity items and enhance comparisons. Beyond replicating the current study, it may be expanded upon in a number of ways by improving measurement items and enhance the comparisons examined. As questioning and bisexual students have been consistently established at greater risk for negative outcomes compared to monosexual lesbian/gay youth (e.g., Birkett et al., 2009), it is imperative that future studies utilize sexual orientation items that enable researchers to compare monosexual groups (i.e., lesbian/gay, heterosexual) as well as questioning and bisexual/sexually fluid groups. Additionally, given that gender non-conforming individuals are at the greatest risk for negative outcomes within the LGBTQ youth community (D'Augelli, Grossman, & Starks, 2006), researchers should also include a gender identity item separate from sexual orientation that allows comparison of cisgender, transgender, genderfluid, and gender-questioning youth. Moreover, researchers ought to consider the intersection of gender and sexuality as well as other identities to more holistically capture and better assess the potential differences in the experiences of our increasingly diverse and heterogeneous youth (Cole, 2009). Although there is a lack of

consensus for how to define and measure sexual orientation and gender (e.g., Gates, 2011), some items are provided below that would allow for these more sophisticated comparisons of groups and examinations of sexual and gender identity, based on recommendations by Saewyc et al. (2004) and Westbrook and Saperstein (2015):

1. What was your sex at birth?
 - a. Male
 - b. Female
2. How would you describe your *gender identity*?
 - a. Cisgender Boy/Man (Born biologically male.)
 - b. Cisgender Girl/Woman (Born biologically female.)
 - c. Transgender Boy/Man (Born biologically female.)
 - d. Transgender Girl/Woman (Born biologically male.)
 - e. Genderqueer, Genderfluid, or Gender Non-Binary
 - f. I am not sure yet
 - g. I don't understand this question
3. Who are you *sexually* attracted to? (Please select all that apply.)
 - a. Cisgender Boys/Men (Born biologically male.)
 - b. Cisgender Girls/Women (Born biologically female.)
 - c. Transgender Boys/Men (Born biologically female.)
 - d. Transgender Girls/Women (Born biologically male.)
 - e. Genderqueer, Genderfluid, or Gender Non-Binary People
4. Who are you *romantically* attracted to? (Please select all that apply.)
 - a. Cisgender Males (Males born as males.)

- b. Cisgender Females (Females born as females.)
 - c. Transgender Males (Males born as females.)
 - d. Transgender Females (Females born as males.)
 - e. Genderqueer, Genderfluid, or Gender Non-Binary People
5. How would you describe your *sexual* orientation? (Single selection.)
- a. Heterosexual (sexually attracted to the opposite sex only)
 - b. Gay or Lesbian (sexually attracted to same sex only)
 - c. Bisexual (sexually attracted to more than one sex)
 - d. Pansexual (sexually attracted to all sexes)
 - e. I am not sure yet
 - f. I don't understand this question
6. How would you describe your *romantic* orientation?
- a. Heteroromantic (romantically attracted to the opposite sex only)
 - b. Gay or Lesbian or Homoromantic (romantically attracted to same sex only)
 - c. Biromantic (romantically attracted to more than one sex)
 - d. Panromantic (romantically attracted to all sexes)
 - e. I am not sure yet
 - f. I don't understand this question
- 7.

Further examine SOV. The same dataset or similar may be used to examine the effects of the predictor items by county, specifically assessing whether SOV is more harmful for either heterosexual or LGBTQ groups in low-LGB counties, as it appears more prevalent

in these counties (see Figures 4-5). It is possible that the lower reporting of LGB identities in these counties may also be an effect of the SOV-related gender policing experienced by the youth in these areas, leading to more youth endorsing heterosexuality due to social desirability bias (e.g., Frosh, Phoenix, & Pattman, 2002). It is also conceivable that the higher magnitude of harmfulness of SOV for heterosexual groups found in the current study may be amplified when comparing low-LGB counties to high-LGB counties. Fetner and Kush (2008) conducted a related study determining the common characteristics of public secondary schools most likely to adopt gay-straight alliances, finding that location, number of students, region of country, and support groups outside those schools promoted the early adoption of GSAs. A similar study could examine the common characteristics of schools that are likely to report higher SOV and/or higher LGB identity. Future researchers may also compare SOV to other non-bias harassment and bullying to continue assessing the toxicity of this particular bullying for both LGBTQ and heterosexual groups, as it is currently believed that SOV is associated with more negative mental health outcomes (e.g., McDevitt, Balboni, Garcia, & Gu, 2001).

Further examine protective factors. Although school support is considered a significant and sometimes even more protective factor compared to other forms of social support (Chu et al., 2010), it is imperative that researchers continue assessing the buffering effect of other forms of social support, such as peer support and family acceptance, particularly as they affect LGBTQ youth. By measuring all three key sources of social support (school, peer, family), future studies may not only compare the buffering effect of these factors relative to one another, but also determine whether one form of support may be sufficient enough to buffer the effects of SOV in lieu of another. Additionally, researchers

may determine whether school-based support is capable of buffering against the recognized negative effects of a lack of family support and acceptance for LGBTQ youth (e.g., Poteat et al., 2011; Shilo & Savaya, 2010). Furthermore, future studies should include LGBTQ-specific support items similar to those used the GLSEN national climate survey (Greytak et al., 2016) to assess whether this targeted support provided by staff has a significant effect on its buffering capabilities. As previously mentioned, within the current study it is possible that school support was not as protective a factor as anticipated for LGB-identified youth because as measured in the study, this support may or may not include support of an LGB student's identity or SOV intervention. By including items such as "How many teachers or other school staff are supportive of LGBT students at your school?" or "How supportive is your school administration of LGBT students?" (Kosciw et al., 2016), future researchers may assess whether the type of school support matters (LGBTQ-affirming or not) for LGBTQ-identified youth.

Improve psychological indicators. As previously indicated in the Limitations section, although both negative and positive facets of academic outcomes were assessed, the key indicators used to operationalize psychological outcomes were limited in both content validity (measuring psychological distress with two brief dichotomous items) and valence (only negative psychological outcomes). As previously discussed, it would behoove future researchers to utilize a dual-factor model of mental health to better capture both the positive and negative psychological effects of victimization (e.g., Antaramian et al., 2010; Suldo & Shaffer, 2008). Furthermore, future studies utilizing a dual-factor mental health framework could also compare the experience of SOV by wellness group (i.e., low/high wellbeing, low/high distress) similar to previous work in this area (Greenspoon, & Saklofske, 2001;

Lyons, Huebner, Hills, & Shinkareva, 2012). To that end, future studies should include one or more robust and psychometrically sound instruments to assess both psychological distress and wellbeing (Rose et al., 2017), such as the Social and Emotional Health Survey (SEHS; Furlong et al., 2013; You et al., 2013, 2015) for assessment of students' strengths and resources and the Behavior Assessment System for Children (BASC; Kamphaus & Reynolds, 2015) for assessment of internalizing and externalizing psychopathology in adolescents. Newer iterations of the CHKS contain several dual-factor measures, such as the SEHS, the Mental Health Continuum-Short Form (MHC-SF; Lamers, Westerof, Bohlmeijer, ten Klooster, & Keyes, 2011), Brief Multidimensional Students' Life Satisfaction Survey (BMSLSS; Seligson, Huebner, & Valois, 2003), and additional distress measures.

D. Implications for Researchers

The framework and results of this study engender a host of general recommendations for those researchers seeking to better understand the experience of sexual minority, victimized, and otherwise marginalized youth:

Increase availability of sexual orientation and gender identity data. Include sexual orientation and gender identity items as standard demographic items for any given survey and assess monosexual, bisexual, and gender identities separately, as bisexual, questioning, transgender, and gender-questioning are distinct groups within the LGBTQ community that have previously been obscured at best and erased at worst in the literature and larger societal conversations, despite possessing the most urgent need for risk prevention and intervention (Barker et al., 2012; Grossman & D'Augelli, 2006, 2007).

Prioritize LGBTQ adolescent research. Continue to conduct research on LGBTQ adolescents under the age of 18, as there is a dearth of this research compared to other groups

of adolescents, possibly due to self-censorship by investigators who fear that their protocols may be rejected by IRB when including youth under age 18 within this population (Mustanski, 2011, 2015). In fact, a recent review of school support personnel journals ranging from school psychology to health to social work revealed that LGBT-related articles only comprised 0.3-3% of these journal's entries over a 15-year span, indicating significant need for LGBTQ research representation in this area (Graybill & Proctor, 2016). To fully capture the developmental trajectories of LGBTQ people, researchers must study these sexual minorities from earlier ages than 18. As Mustanski (2011) so pointedly stated, “[LGBT] people do not emerge fully formed at age 18 like the Roman goddess Venus from the sea and it is not scientifically sound to begin all studies of LGBT populations at age 18” (p. 675). The author asserts that researchers must be familiar with relevant ethical, legal, and regulatory principals and provides several recommendations to navigate the IRB review process. For example, the author provides an IRB application write-up requesting a parental permission waiver in the article appendix, arguing that federal regulations allow an IRB to waive parental permission if it “is not a reasonable requirement to protect the subjects” (45 CFR 46.408(c)), and in the case of LGBTQ adolescents, “requiring participants to disclose their sexual orientation to their parents as a condition for research participation could actually increase the risk since parental abuse, rejection, and neglect has been documented as a result of disclosure for some youth” (Mustanski, 2011, p. 677). The author also advocates for LGBTQ youth researchers to serve on their IRBs and attend the IRB meetings where their work will be reviewed to increase the chances of approval and facilitate the transparency between LGBTQ researchers and IRBs.

Conduct secondary data analyses and meta-analyses. Before embarking on an empirical design, consider how existing large-scale datasets may be utilized in secondary data analysis, particularly as under-represented subgroups such as LGBTQ youth may be more accurately captured through large-scale data (Donnellan & Lucas, 2013). Additionally, the applied psychology field as a whole is currently lacking meta-analyses that integrate, evaluate, and contextualize the exponentially increasing existing studies that examine similar topics (Glass, 1976). The school psychology literature is in even greater need of meta-analyses, as Floyd et al. (2011) found that only 1% of articles across 61 school psychology journals were meta-analyses. Some scholars argue that meta-analyses are necessary in advancing cumulative research knowledge and developing theories, as meta-analysis has demonstrated “that, contrary to widespread belief, no single primary study can resolve an issue or answer a question. Consideration of meta-analysis principles suggests that there is a strong cult of overconfident empiricism in the behavioral and social sciences, that is, an excessive faith in data as the direct source of scientific truths and an inadequate appreciation of how misleading most social science data are when accepted at face value and interpreted naively” (Schmidt, 1992, p. 1179). A thorough overview of the strengths, limitations, and process of conducting meta-analyses can be found in Card and Casper’s (2013) chapter.

Improve data access. Make original primary data available online via an archive to allow future researchers to expand analyses, improve experimental designs, and detect errors. This not only benefits the scientific community by enabling the advancement of knowledge, but can also support and amplify published work, maximize information access while minimizing effort expenditure, increase credibility, and increase the number of citations for the original researcher (Church, 2001).

Increase university-school partnerships. Partner with local schools and agencies to collect data, establishing university-school partnerships where able to facilitate both the advancement of knowledge and provision of needs assessment and high-quality resources to local schools (Coburn, Penuel, & Geil, 2013). Seattle University’s Graduate Counseling program’s partnership with local area schools to provide Safe Space programming is an exemplary case of utilizing these partnerships to specifically benefit local LGBTQ youth that may otherwise not gain affirming policy and programming in their school environment (Ratts et al., 2013).

Improve the quality of quantitative methodology published in literature. Avoid major common fallacies of quantitative research methodology by consulting Wang, Watts, Anderson, and Little’s (2013, p. 743-748) “Summary Checklist,” which covers contextual variable, measurement error, missing data, significant testing, statistical power, and factor analysis fallacies. The authors not only provide a wealth of published examples of and explanations for these fallacies, but they also assert that utilizing sound methodology is an ethical imperative and that misapplication of quantitative methods is more dangerous than nonapplication, as quantitative methods hold a false sense of objectivity and scientific certainty (Berger & Berry, 1988; Wang et al., 2013).

E. Implications for Schools

This study reiterated the importance of school-based support in promoting positive psychological and academic outcomes as well as the detrimental effects of sexual orientation victimization for both heterosexual and LGBTQ youth. Given that the majority of evidence-based practice to promote positive, LGBTQ-affirming school climates involve systems-level practice, school psychologists are ideal allies for these youth in schools, as they possess a

specialized systems-level training, wide audience, knowledge of sociocultural influences, and skills in consultation and counseling (Heck et al., 2014; Heck, Flentje, & Cochran, 2011; McCabe, 2014). Furthermore, school psychologists adhere to legal and ethical principles designed to protect and advocate for such youth, as enumerated in the recently published National Association of School Psychologists' (NASP) position statement on LGBTQ youth (NASP, 2011), reiterated again specifically for transgender youth in a separate National Association of School Psychologists (2014) statement.

There are several ways school psychologists and other school professionals can seek to empower LGBTQ youth at their schools while also promoting a positive climate. In addition to these suggestions, school staff may at the very least endeavor to act as role models for LGBTQ students, most of whom cannot identify any daily accessible role models in their lives (Bird, Kuhns, & Garofalo, 2012). Recommendations for school-based advocacy and action are listed below, using the most salient evidence-based recommendations made by Heck, Flentje, and Cochran (2011), California Safe Schools Coalition members Russell, McGuire, Laub, and Manke (2006), and McCabe (2014). There is a demonstrable need for an increase in school-based practices to support LGBTQ youth, as schools in many states have seen little change in implementation of these practices and only one, identifying safe spaces for LGBTQ youth, appeared to increase in most states over 2008-2014 (Demissie, Rasberry, Steiner, Brener, & McManus, 2018). Although these practices focus on supporting LGBTQ youth, they are designed to help all children, as reducing LGBTQ-based victimization and promoting an affirming school climate is beneficial for all youth (Chu et al., 2010; Espelage et al., 2000).

Train school staff. Secondary school professionals and administrators have an ethical imperative to educate themselves on issues that LGBTQ youth may face, as well as the ways best to work with and support these youth, given that it is estimated that there is at least one LGBTQ-identifying youth in every high school classroom, regardless if they are out to others (Fisher et al., 2008). To this end, school administrators should prioritize in-service trainings specifically designed to make staff more comfortable and competent when serving these students' needs in their schools, in turn promoting a safer environment for youth (Byrd & Hays, 2013; Greytak, Kosciw, & Boesen, 2013; Russell et al., 2006a). Greytak et al. (2013) found that a two-hour training workshop provided to certificated staff on the bullying and harassment of LGBT youth increased teachers and mental health professionals' self-efficacy in intervening during instances of harassment, empathy for LGBT youth, and awareness of issues. Unfortunately, one survey by the California Safe Schools Coalition indicated that only 39% of districts in California reported willingness to include training and LGBTQ-inclusive curricula (Russell et al., 2006a). Recommended best practices for staff diversity training include: (a) utilizing staff development days to ensure attendance, including education of basic terms, misconceptions, how to intervene in incidents of harassment (Goodrich, Harper, Luke, & Singh, 2013); (b) ways school administrators can communicate their support for LGBTQ issues (Sawyer et al., 2006); and (c) use communication techniques that encourage respect and find common ground with school personnel (GLSEN, 2009). Additionally, McHaelen (2006) proposes a sample LGBTQ training curriculum that can be easily adapted for an individual school site. In-service trainings may also include LGBTQ students to both empower the students in a leadership role but also personalize the issues

discussed and reduce sexual and gender prejudice through this direct contact (Graybill, 2011; Poteat et al., 2015).

Scholars have also called for increasing the training and preparation for pre-service teachers to work with and advocate for LGBTQ youth and families, particularly because some educators have reported feeling hesitant to participate in school-based training (Dessel, 2010). Riggs, Rosenthal, and Smith-Bonahue (2011) piloted a cognitive-affective approach to positively shift pre-service teachers' attitudes, knowledge, and anticipated professional behaviors related to LGBTQ youth and families. Their study also indicated that pre-service teachers possessed scarce knowledge about LGBTQ individuals, which points to the need for providing this training *before* teachers enter schools and encounter these youth and their families. Clark (2010) analyzes her own course materials and distinguishes between neutral, anti-homophobia, and LGBTQ-ally stances for pre-service teachers. Clark calls for training teachers to not only intervene in instances of homophobia, but to act as allies and actively affirm and uphold LGBTQ identity in their work. Trainers may wish to utilize Waters' (2010) developmental model of "allyhood" to tailor training to different levels of readiness and more appropriately target school staff needs. Cooper, Dollarhide, Radliff, and Gibbs (2014) outline an LGBTQ Ally Training Program developed by the University of Michigan that follows this developmental model as well as Evans and Washington's (2010) four-step process toward becoming an LGBTQ ally.

Although we must endeavor to establish safe schools for LGBTQ youth and their heterosexual peers, school-based mental health professionals and educators should not stop their efforts at this basic goalpost. "As long as educators view inclusive non-discrimination policies or one-time staff awareness trainings as victories and endpoints in themselves, the

movement to eradicate heterosexism will linger in the safety zone and fail to reach its primary goal” (Hirschfeld, 2001, p. 629). Thus, in-service or pre-service trainings should not be aiming for the “absence” of bullying and instead need to address the systemic school cultural issues that reinforce homophobic biases and heterosexism, such as the normalization of homophobic language (Payne & Smith, 2013). The bully/victim binary that so many LGBTQ trainings focus on perpetuates the traditional thinking that “bullies need rehabilitation, victims need protection, and schools can lay blame outside their walls because the aggressive children bring the problem with them into the school environment” (Payne & Smith, 2013, p. 5).

Another way administrators and school psychologists may empower staff to support and advocate for LGBTQ youth beyond anti-bullying intervention would be to actively support school staff in serving as advisors for Gay-Straight Alliances (GSAs). GSA advisors who feel supported by their colleagues and personal support network also feel more empowered to engage in social justice efforts and advocate for students at school (Graybill, 2011). This schoolwide culture of support is especially important when the community outside of the school contains fewer LGBT resources and supports, such as most rural areas of the U.S., which are seen as major barriers for GSA advisors in advocating for LGBTQ students (Graybill, 2011; Rienzo, Button, Sheu, & Li, 2009). More about GSAs is written below.

Identify “safe spaces” for LGBTQ youth with visual symbols of support. One of the easiest and most cost-effective means to improve school climate for LGBTQ youth is to mount LGBTQ-affirming visual symbols such as stickers or placards in classrooms and staff offices to identify LGBTQ-affirmative staff, teachers, and administrators to whom LGBTQ

students may go for support (Evans, 2002). Although this concept originated in the university environment to support LGBTQ college students (Finkel, Storassli, Bandele, & Schaefer, 2003), it is increasingly being implemented in K-12 settings (Demissie et al., 2018) and found to increase LGBTQ-affirming attitudes (Hothem & Keene, 1998) and help students feel safe (Evans, 2002) when paired with in-service training and programming. Seattle University's Graduate Counseling program has modeled a university-school partnership method of bringing safe space programming to local K-12 schools (see Payne & Smith, 2011; Ratts et al., 2013), which provided extra personnel to schools to train staff and support LGBTQ students. While scholars advocate for LGBTQ safe space/ally visual interventions to be paired with training for school staff to increase their preparedness for providing support and willingness to put up signs (Poynter & Tubbs, 2007), there is some evidence that these visual symbols alone are used by LGBTQ youth to navigate their settings and identify affirming adults (Wolowic, Heston, Saewyc, Porta, & Eisenberg, 2016).

Empower students and foster positive school climate through Gay-Straight Alliances. A main intervention suggested in the literature to empower students is acting as an advisor for and supporting the formation of a Gay-Straight Alliance (GSA), a student-led club open to all genders and sexual orientations with the intention to “provide safe, affirming spaces and critical support for LGBT students and also contribute to creating a more welcoming school environment” (Kosciw, Diaz, Greyak, & Bartiewicz, 2010, p. xvii). In addition to providing a safe space to discuss issues, student GSA members act as LGBTQ advocates and activists within the school system (Schindel, 2008). GSAs are an ideal intervention because they require minimal resources to implement, since they only require a volunteer staff advisor and do not require formal curriculum (Griffin, Lee, Waugh, & Beyer,

2004; Marx & Kettrey, 2016; Poteat et al., 2015). The Equal Access Act (1984) protects students' right to establish religious or secular extracurricular clubs on school grounds, including Gay-Straight Alliances. Studies have indicated that GSAs are associated with lower levels of illicit drug (Heck et al., 2014), dating violence (Goodenow, Szalacha, & Westheimer, 2006), school victimization, (Goodenow et al., 2006; Kosciw et al., 2014; Marx & Kettrey, 2016), and higher school belongingness and academic outcomes (e.g., Kosciw et al., 2014; Poteat, Sinclair, DiGiovanni, Koenig, & Russell, 2013). Additionally, a qualitative study by Lee (2002) found that GSAs had positive impacts on academic performance, school belongingness, family connections, and comfort with one's sexual orientation. Most of these studies are limited in that they are cross-sectional and correlational, and thus it is difficult to claim whether GSAs are a direct facilitator of positive school climates or they merely represent an indicator of positive school climate for LGBTQ youth.

These positive psychological and educational associations with GSA presence have also been found regardless of whether LGBTQ youth are members of the GSA present in their school, further suggesting that either GSAs indicate positive school environments or that their presence is equally powerful regardless of membership (Walls, Kane, & Wisneski, 2010). It is also possible that GSAs are associated with greater feelings of safety for LGBTQ youth because they may indicate a positive and accepting environment to these youth and signal to staff members that LGBTQ victimization will not be tolerated (Goodenow et al., 2006). An active and visible GSA would also increase opportunities for heterosexual and cisgender students and staff to engage with sexual and gender minority students and staff, and these "direct contact" encounters may lower sexual (Heinze & Horn, 2009; Smith, Axelton, & Saucier, 2009) and gender prejudice (Martin, Fabes, & Hanish, 2014). Even in

the absence of “direct contact” encounters, there is evidence that “extended contact,” such as knowing that a friend has a sexual minority or gender-variant friend may lower this prejudice as well (Crisp & Turner, 2009; Poteat et al., 2015).

More broadly than fostering community for youth through GSAs, schools can also promote the inclusion of LGBTQ youth in broader extracurricular activities, which are associated with greater interpersonal competence, school engagement, sense of belonging, and educational aspirations (Denault & Poulin, 2009; Marsh & Kleitman, 2002). However, in order to facilitate their inclusion, school staff must first address the barriers for sexual minority and gender nonconforming youth in accessing these activities, including widespread hegemonic masculinity and sexual prejudice, victimization, lesbian/bisexual stereotyping of girls participating in sports (Gill et al., 2010), and victimization of males participating in female-oriented activities (Barron & Bradford, 2007). Additionally, many school policies related to extracurricular activities such as sports further marginalize transgender youth, as sports team participation may be restricted by biological sex (Poteat et al., 2015). Despite these many barriers to participating in sports and related clubs, sexual minority and gender nonconforming youth appear to experience positive academic outcomes and heightened wellbeing when they participate (Toomey & Russell, 2013).

Inform students of their legal rights. School professionals also have an ethical and legal imperative to familiarize themselves and school staff of federal, state, and citywide legal issues pertaining to sexual and gender minority students. Additionally, students and families need to be informed of their educational and legal rights. Lambda Legal (www.lambdalegal.org) is an excellent LGBTQ legal resource for educators, advocates, and LGBTQ youth and provides both federal and state-specific information on individual rights

across workplace, healthcare, parenting, public accommodations, and school settings. The Movement Advancement Project (MAP; www.lgbtmap.org) is a think tank that specializes in tracking LGBTQ legislation across the country and develops an “Overall Policy Tally” and “Equality Profile” each state based on the types of state-specific legislation available and how they affect LGBTQ individuals. Although MAP (2018) estimates that 43% of the LGBT population lives in states with “low overall policy tallies,” there are several federal laws that guarantee protections and rights for LGBTQ students regardless of their state of residence (adapted from Lambda Legal, 2010):

- **Right to protection from harassment.** Title IX of the Education Amendment Acts of 1972 bans discrimination based on sex and protects students at schools that receive federal funds, including protecting students from sexual harassment and discrimination for failing to conform to gender stereotypes, which is often present in LGBTQ-based victimization. Title IX thus requires public schools to address any harassment toward LGBTQ students the same way they would address harassment against any other student, even if there is no state-specific or school-wide enumerated anti-bullying or anti-discrimination policy protecting LGBTQ individuals.
- **Right to privacy of sexual orientation.** Public school employees cannot disclose sexual orientation information about students to anyone without that student’s permission, even parents, regardless of whether that student is “out” to other people at school (*Sterling v. Borough of Minersville*, 2000).
- **Right to change name and gender marker on educational records.** Under the Family Education Rights and Privacy Act (FERPA), students age 18 and over and parents/guardians have the right to request that their school change the name and

gender marker used on school records if they are “inaccurate, misleading, or in violation of the student’s rights of privacy” (34 C.F.R. § 99.7(a)(2)(ii); Lambda Legal, 2014). For transgender students who wish to keep their transgender status private, as a former name and gender marker on educational records may essentially “out” them to anyone who accesses the record and thus violate FERPA.

- **Right to form and establish Gay-Straight Alliances.** The Equality Access Act – If a public school permits any noncurricular clubs, then it must allow students to form a Gay-Straight Alliance and it cannot be treated any differently from another school club.
- **Right to freedom of gender expression.** Title IX bans discrimination based on gender identity and thus protects students’ right to wear any clothing deemed appropriate for other students, regardless of gender, even if these articles of clothing aren’t stereotypically associated with the student’s perceived gender (e.g., masculine students wearing skirts).
- **Right to LGBTQ-affirming expression.** The First Amendment’s free speech clause allows students to speak and wear messages and images without censorship or discrimination, unless the student speech/expression is considered verbally abusive, promotes illegal drug use, or is lewd or profane. Additionally, district and federal courts have regularly ruled against school officials restricting LGBTQ-supportive student expression by claiming that it is “sexual” and/or in violation of abstinence-only curriculum laws (e.g., *Couch v. Wayne Local School District*, 2012).
Furthermore, although students also have a constitution right to voice objections to homosexuality or LGBTQ rights, “intimidation of one student by another, including

intimidation by name calling, is the kind of behavior school authorities are expected to control or prevent. There is no constitutional right to be a bully” (*Sypniewski v. Warren Hills Regional Board of Education*, 2002, p. 29). Additionally, there is no law that requires school officials to agree with students’ expressed objections to LGBTQ rights and they may use this opportunity to voice schoolwide support for the safety and inclusion of their LGBTQ students.

- **Right to bring same-sex dates to school events.** The First Amendment guarantees students’ rights to bring a same-sex date to school dances and allow students to run for Prom Queen or Prom King regardless of gender. Additionally, any school restrictions on public displays of affection must apply to all couples, not just same-sex couples.
- **Right to LGBTQ-affirming mental health services.** Senate Bill 1172 was passed in 2012 to make it unlawful for any mental health provider to practice sexual orientation change efforts (i.e., sexual orientation conversion therapy) with any individual under age 18.

As previously mentioned, school staff should also be aware of student rights guaranteed by state and local legislation. One of those salient recent developments in the area of LGBTQ student rights in California is the recent passage of AB 1266, which provides all students with the legal right to use the school bathroom and locker facilities that align with their self-identified gender, regardless of what sex is officially recorded by the school. School psychologists can be most instrumental in empowering transgender students by providing them with information about their rights as well as assist in training and guiding school staff and districts in the best implementation of this law. The California School

Boards Association (2014) provides specific legal guidance to school districts, suggesting that districts should, upon request: (a) provide alternate facilities (e.g., bathroom, locker room) to students, (b) allow students to use gender-specific facilities consistent with their gender identity, (c) instruct staff to refer to students by their preferred pronouns, (d) accommodate transgender and gender nonconforming students' identities in their school records system, and (e) allow students to participate in athletics according to their gender identity.

Address bullying and discrimination. Although schools should endeavor to affirm and understand LGBTQ youth beyond the bully/victim binary (Payne & Smith, 2013), sexual orientation victimization is pervasive and LGBTQ youth are at disproportional risk of being harassed at school (Katz-Wise et al., 2012). School psychologists have trained expertise that can aid school administration in promoting school safety by recommending effective, comprehensive, and egalitarian anti-bullying and disciplinary policies. School administrations may wish to first identify their district and school-wide policies in place and then help develop a consistent and equitable disciplinary plan with strategies to confront bias and harassment inside and outside of class, focusing on instituting a school-wide anti-bullying policy that specifically enumerates protection for sexual orientation, gender identity, and gender expression.

Nearly all U.S. states have passed anti-bullying legislation, but only a small percentage of these states have passed enumerated policies that explicitly protect students based on actual or perceived sexual orientation, gender identity, and gender expression (Poteat et al., 2015; Russell, Kosciw, Hom, & Saewyc, 2010). Additionally, schools with enumerated policies (explicitly declaring protection of identity categories such as race,

religion, disability) often neglect to include sexual orientation, gender identity, and gender expression as protected categories because they are the most contested (Horn, Szalacha, & Drill, 2008; Russell et al., 2010). This leads to only 7.4% of LGBTQ students reporting that they attend a school with a comprehensive anti-bullying policy that enumerates sexual and gender diversity harassment in the latest available GLSEN climate data, indicating a clear need for this policy development at schools (Kosciw et al., 2014). School psychologists can also inform their administrators that there is liability associated with failing to protect LGBTQ students from harassment regardless of whether there are state-specific protections in place, such as *Henkle v. Gregory* (2002), which cost the school district a \$450,000 settlement payment.

LGBTQ students attending schools with a comprehensive anti-bullying policy that specifically enumerates protection for LGBTQ students and ways staff can intervene in incidents report more staff intervention, less biased language, lower severity of victimization at school (Kosciw et al., 2014; Russell et al., 2006b), and reduced risk of suicide (Hatzenbuehler & Keyes, 2013). There is also some evidence to support that enumerating protections for LGBTQ students improves family-school connections for those families of LGBTQ youth who wish to work with school administration around these issues (Johnson, Sikorski, Savage, & Woitaszewski, 2014). In order to empower students and increase the likelihood that they will intervene on behalf of each other in instances of bullying, students should be included in the development of anti-bullying programs and policies (Wernick, Kulick, & Inglehart, 2013).

Educate students with LGBTQ-inclusive curricula. Californian schools have a legal imperative in the form of the FAIR Education Act (2011) to infuse history about

LGBTQ figures and issues in their social studies curriculum. In contrast, 20 states have “anti-gay curriculum laws,” with some state laws specifically prohibiting development of LGBT curricula (for a breakdown see Rosky, 2017). A poignant example is Texas’ anti-LGB curriculum law, that specifically requires teachers to instruct students that “homosexuality is not a lifestyle acceptable to the general public and homosexual conduct is a criminal offense” (Mallory, Brown, Russell, & Sears, 2017; TEX. HEALTH & SAFETY CODE § 163.002 (2016)). This is unfortunate, as the exclusion of LGBTQ-inclusive curricula perpetuates heterosexist culture within schools (Payne & Smith, 2013) and both heterosexual and LGBTQ students who learn about LGBTQ issues in their school curricula report significantly less harassment (Kosciw et al., 2014; Russell et al., 2006a) and more positive sexual diversity climate (Szalacha, 2003). Additionally, Toomey, McGuire, and Russell (2012) found that students perceived their schools safer for gender nonconforming male peers when the school included LGBTQ issues in the curriculum. Furthermore, Poteat et al. (2015) argue that “students’ knowledge of diverse groups is itself a necessary and legitimate area of academic competence...Students must be aware of how their own attitudes, beliefs, and behaviors are situated in a diverse society” (p. 290).

Vecellio (2012) provides some suggestions for integrating LGBTQ content into curriculum using the Four Levels of Integration of Multicultural Content model (Banks, 2001) and existing California content standards. Organizations such as GLSEN (www.glsen.org) and GSA Network (<http://www.gsanetwork.org/FAIR>) provide many free online LGBTQ-inclusive education resources, including LGBTQ educational films, curriculum packages, and lesson plans. For comprehensive K-12 guidelines, see those provided by the Future of Sex Education (FoSE, 2012; www.futureofsexed.org) and

Sexuality Information and Education Council of the United States (SIECUS, 2004; www.siecus.org). Perhaps the easiest integration of LGBTQ content uses the Level 1 approach, which focuses on providing information about the LGBTQ community's historical contributions to U.S. society, such as information on historical figures or important events. This Level 1 content can be anchored within the school community around any of the many LGBTQ awareness dates throughout the academic year, such as Harvey Milk Day on May 22nd or LGBT History Month in October (GLSEN, 2014).

Improve mental health care service and access for students. Schools are an ideal context to provide mental health resources to youth, as schools are a compulsory community system built into children's daily routines and thus are readily accessible and reduce stigma associated with seeking help (Hoover et al., 2007; Soleimanpour et al., 2010). The accessibility of school-based mental health and school support staff has the potential to be especially impactful for vulnerable populations such as LGBTQ youth who experience many barriers in accessing care and disproportionate mental health disparities (Ard & Makadon, 2015). However, schools face many barriers to increasing their provision of mental health services, such as limited time, financial, personnel, and spatial resources (Splett & Maras, 2011). Multisystem partnerships may be a viable way to overcome these logistical and financial barriers, meeting both the mental health needs of the school while enhancing access for existing community agencies (Powers, Edwards, Blackman, & Wegmann, 2013). Lean and Colucci (2010) propose a School-Based Integrated Support Services Model (SSISM) that aligns with schools' existing use of tiered intervention frameworks. Although these partnerships often face challenges in sustainability (Stiffman et al., 2010), key recommendations to enhance the longevity of these projects include developing positive

relationships, open communication between collaborating systems, regularly scheduled meetings between systems, and the establishment of an advisory board or dedicated team (Powers et al., 2013). If schools do not establish multisystem partnerships to deliver school-based mental health services, they must still endeavor to secure school-community collaboration so that school-community care linkages exist for those students who are identified as experiencing unmet social-emotional issues beyond the scope of the school services available. Follow-ups with identified students screened for mental health risk in one study found that high-risk students reporting suicidality were less likely to receive mental health care after receiving a referral to an outside provider (Husky et al., 2011), indicating that schools' follow-through in care linkages are particularly critical for these high-risk cases.

F. Implications for Public Policy

The recommendations for public policy below take into consideration recommendations from research literature, think tanks, and advocacy groups divided into three key areas: (a) research, (b) schools, and (c) legislation.

Include LGBTQ populations in public research. Most current data come from probability samples that have included items asking about one or more dimensions of sexual orientation, such as CDC's Youth Risk Behavior Surveillance System (Mustanski, 2015). Thus, it is imperative that these national and state-wide systems include sexual orientation and gender identity items as standard demographic items for any given data collection, whether it is for surveillance or clinical use. Fortunately, the field is moving toward collecting sexual orientation and gender identity information as standard clinical practice, as evidenced by the Centers for Medicare and Medicaid Services and the National Coordinator for Health Information Technology now requiring electronic health record software certified

for Meaningful Use to include these items (Cahill, Baker, Deutsch, Keatley, & Makadon, 2016).

Additionally, current lack of research on LGBTQ adolescent populations leads to a lack of clinical trial evidence to support treatment and prevention choices, and thus many contemporary interventions are largely based on evidence with old adult populations, creating a “developmental mismatch” between the interventions available and the adolescents with the great need (Fisher & Mustanski, 2014, p. 4). One way to ameliorate this need for LGBTQ youth research would be to increase the availability of government grants and foundational funding specifically targeting this research and other LGBTQ community work. Funders for LGBTQ Issues (Maulbeck, 2013) found that although LGBTQ foundational funding has increased dramatically over the past decades (from \$16,000 in 1973 to \$123 million in 2011), it makes up only a small fraction (0.26%) of overall U.S. foundation dollars granted annually, and the majority of these donations are driven by private LGBTQ donors themselves. Additionally, education funding for LGBTQ issues is one of the lowest areas of foundational funding in comparison to other areas such as civil rights and community funding (Maulbeck, 2013). Furthermore, a review of National Institutes of Health (NIH) funding from 1989-2011 concluded that only 0.1% of all NIH-funded studies concerned LGBT health when excluding projects about HIV/AIDS (Coulter, Kenst, Bowen, & Scout, 2014). One explanation for this is falsely equating LGB health research with HIV research, which fails to provide a true picture of LGB health and functioning (Voyles et al., 2015). Coulter et al. (2014) call for public policy to designate LGBTQ people as priority populations for research, particularly expanding intervention research and understudied subpopulations (e.g., transgender individuals).

Increase funding for LGBTQ-affirming and general school-based mental health efforts. Similar to LGBTQ research, the majority of federal funding for LGBTQ-related health services has historically focused almost exclusively on treating HIV in gay men (Epstein, 2003). Additionally, Martos, Wilson, and Meyer (2017) found that 13 U.S. states do not possess a single LGBT community health center and only 110 centers exist in the U.S. overall that provide mental health services. As noted in the Implications for Schools section, school-based mental health is a prime vehicle to provide highly needed and accessible care for all youth, particularly LGBTQ youth who face additional barriers to care. Thus, policymakers should shift funding priorities to increasing resources for schools to provide school-based mental health resources. There is evidence to support the adoption of increased funding for school-based mental health personnel. Reback (2010) found that adopting state-funded counselor subsidies or minimum counselor-student ratios reduced the proportion of teachers reporting that their instruction suffered due to student misbehavior and reduced overall reported student problems related to physical fights, truancy, theft, and drug use. In addition to increasing funding available to schools and school-based health centers to provide these services, some scholars argue for legislation that would require hospitals to support school-based health centers, such as the Affordable Care Act requirement of non-profit hospitals to conduct a Community Health Needs Assessment at least every three years to catalyze the partnerships between health systems and local school districts (Acosta Price, 2016).

Increase LGBTQ-affirming legislation. Given the various school considerations detailed, it is clear that legislation and public policy have striking and profound impacts on the day-to-day rights, protections, and lives of LGBTQ students, as well as the capacity for

school-based figures to support and advocate for these youth. There is also some evidence that legislation has direct impacts on LGBTQ mental health, such as higher psychiatric disorders for LGB adults living in U.S. states with same-sex marriage bans (Hatzenbuehler et al., 2010) and higher psychological distress for LGB in the months following an election cycle that contained same-sex marriage bans on the ballot (Rostosky et al., 2009). Biegel and Kuehl (2010) of the Williams Institute in the UCLA Law School and National Education Policy Center collaborated to provide a set of key policy and model state legislative recommendations, including model language, with appropriate research finding considerations for each proposed measure. Additionally, several LGBTQ advocacy groups and think tanks have endorsed federal legislation aimed at improving school safety for LGBTQ youth by specifically prohibiting discrimination and bullying on the basis of perceived sexual orientation and gender identity, requiring LGBTQ curriculum in K-12 schools, requiring inclusive sexual health education, and student rights such as explicit rights for students to use the facilities and participate in activities that align with their identified gender (e.g., bathrooms, locker rooms, sports teams; see <http://www.hrc.org/resources/federal-legislation>). Although states are increasingly adopting LGBTQ-affirming statutes, federal legislation should be pursued where possible, as many LGBTQ youth live in states that would otherwise deny these same protections if it were not for federal law, such as the 24 states that do not have laws protecting LGBTQ students from sexual orientation or gender identity related bullying (MAP, 2018). In addition to adopting LGBTQ-affirming legislation, policymakers should endeavor to publish briefs that include legal guidance for schools in the implementation of any new laws.

G. Conclusion

The current study utilized a structural equation modeling moderation approach to enhance our current understanding of the complex relations between students' self-identified sexual orientation, SOV, school support, and psychological and academic outcomes. Results reiterated previous findings that both sexual minority status and SOV significantly predict negative and psychological outcomes, while school support predicts positive academic and psychological outcomes. However, the study also shed new light on how SOV affects LGB and heterosexual students differently, including the fact that although LGB students reported worse outcomes overall, the negative impact of SOV was significantly greater for heterosexual students across several outcomes. Additionally, victimized heterosexual students appear to receive a greater buffering effect from school support against psychological distress, although school support greatly protected all students. These results and review of the literature led to specific recommendations for research, school, and public policy domains aimed at enhancing both LGBTQ and heterosexual youth's well-being. As there are many domains in which school psychologists may powerfully, directly positively impact these youth, it is the current researcher's hope that professionals engage in any one of these given areas.

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Appendix

Table 1

Literature Review of School-Based Support and Connection Key Terms

Keyword Term	Key Citations	Study Summary	Definition & Measurement of Key Term	Available Sample Items for Measure of Key Term
Student Engagement (4,104 articles) ¹	Oldest Major Citation: Peterson & Fennema (1985; 254 citations ²)	Mathematics achievement in Grade 4 $N = 51$	<i>Engaged time observation instrument</i> Independent work, engagement in math work, being helped by student, being helped by teacher	N/A
	1 st Most Often Cited: Skinner & Belmont (1993; 2,085 citations)	Effects of teacher behavior on student engagement Grades 3-5 $N_{\text{teachers}} = 14,$ $N_{\text{students}} = 144$	<i>Student's Achievement-Relevant Actions in the Classroom (SARAC)</i> for both students and teachers	Teacher items: <ul style="list-style-type: none"> • When we start something new in class, this student participates in discussions. • In my class, this student does just enough to get by. • When working on classwork in my class, this student appears involved.
	2 nd Most Often Cited: Klem & Connell (2004; 1,217 citations)	Effects of teacher support on student engagement, academic achievement, and behavior Grades 3-8 $N = 3,097$	<i>Research Assessment Package for Schools</i> for both students (RAPS-S) and teachers (RAPS-T)	RAPS-S: <ul style="list-style-type: none"> • I work very hard on my schoolwork. • I don't try very hard in school. • I pay attention in class.

				<ul style="list-style-type: none"> • I don't work very hard in school. • When I'm in class I just act as if I'm working. • How important is it to you to do the best you can in school?
Academic Engagement (1,025 articles)	<p>Oldest Major Citation: Capie & Tobin (1981; 13 citations)</p> <p>1st Most Often Cited: Furrer & Skinner (2003; 1,444 citations)</p> <p>2nd Most Often Cited: Aronson, Fried, & Good (2002; 1,030 citations)</p>	<p>Literature review of academic engagement and implications for future research in science classrooms</p> <p>Effects of feelings of relatedness to teachers on classroom engagement in Grades 3-6, controlling for students' perceived control</p> <p><i>N</i> = 641</p> <p>Randomized experimental design demonstrating how exposure to the belief that intelligence is malleable protects African American college students' academic engagement and achievement from stereotype threat</p>	<p>"The amount or proportion of time that students use in pursuing a learning task" (Capie & Tobin, 1981, p. 410)</p> <p>Academic learning time (BTES, 1979), allocated time (Carroll, 1963), academic engaged time (Carroll, 1963; Berliner & Rosenshine, 1976), attention (Bloom, 1976), on-task time (Anderson, 1976)</p> <p><i>Student's Achievement-Relevant Actions in the Classroom (SARAC)</i> for both students and teachers</p> <p>Students' self-reported beliefs that they "enjoy the educational process" and "identify with academic achievement" according to 2 items</p>	<p>N/A</p> <p>Teacher items:</p> <ul style="list-style-type: none"> • When we start something new in class, this student participates in discussions. • In my class, this student does just enough to get by. • When working on classwork in my class, this student appears involved. • How much do you enjoy the educational process – studying, going to class, taking tests, etc. – at Stanford? • Considering all the things that matter to you and make you who you are (e.g., friends, family, activities, sports, talents,

		<p>$N_{\text{Black}} = 42,$ $N_{\text{White}} = 37$</p> <p><i>See also:</i> Libbey (2004; 628 citations)</p>	<p>Literature review of positive orientation to school, school attachment, school bonding, school climate, school connection, school context, school engagement, school involvement, student satisfaction with school, student identification with school, teacher support, academic engagement terminology</p>	<p>Defined as “extent to which students are motivated to learn and do well in school” (Eggert et al., 1994); considered interchangeable with school engagement and student engagement</p> <p>Measures described: Hawkins et al. (1996); Ryan & Patrick (2001); Manlove (1998); Simons-Morton & Crump (2002); Jenkins (1997); Voelkl (1996)</p>	<p>etc.), how important is academic achievement? N/A</p>
School Engagement (1,166 articles)	Oldest Major Citation: Long, Stinson, & Braeges (1991; 43 citations)	Effect of students’ self-perceptions of communication ease and engagement on standardized academic achievement and grades, Grades 7-10 $N = 95$	<p>“The extent that a student’s effort, persistence, and emotional state during learning activities reflect a commitment to learning and successful school performance” (Skinner et al., 1990, p. 24)</p> <p><i>Research Assessment Package for Schools</i> for students (RAPS-S)</p>	<p>RAPS-S:</p> <ul style="list-style-type: none"> • I work very hard on my schoolwork. • I don’t try very hard in school. • I pay attention in class. • I don’t work very hard in school. • When I’m in class I just act as if I’m working. • How important is it to you to do the best you can in school? 	
	1 st Most Often Cited: Fredricks, Blumenfeld, & Paris (2004; 3,457 citations)	Literature review of the definitions, measures, precursors, and outcomes of school engagement	Engagement as a multidimensional construct, a “fusion of behavior, emotion, and cognition” (p. 61)	N/A	
	2 nd Most Often	Comparison of the school	Items based on scales in Finn (1993) taken from	Teacher-reported:	

Cited: Finn & Rock (1997; 1,123 citations)	engagement of 3 groups of low-income ethnic minority students Grades 8-12, grouped based on school completion and academic performance	the <i>NELS:88</i> survey Teacher-reported behaviors (p. 225): “whether the student usually works hard for good grades” (WORK HARD); “frequency with which the student is absent from class or arrives late (ABSENT-TARDY); “extent to which the student completes homework, is attentive in class, and is not disruptive” (ENGAGE)	<ul style="list-style-type: none"> • Student rarely completes homework. • Student is inattentive in class. • Student is frequently disruptive.
	<i>N</i> = 1,803	Student-reported behaviors (p. 225): “how often the student missed school, was late to school, or cut classes” (ATTEND); “frequency with which the student got into fights, got into trouble for not following the rules, or parents were contacted about a behavior problem” (TROUBLE); frequency with which the student arrived at school prepared for class” (PREPARE); “estimate of the total amount of homework completed per week, in school and out” (HOMEWORK); “approximate number of school-based athletic activities” (SPORTS); “number of academically oriented extracurricular activities” (EXTRACURRICULAR)	Student-reported: <ul style="list-style-type: none"> • How useful do you feel math will be in your future? • How much do you feel your classmates perceive you as popular, athletic...?
<i>See also:</i> Libbey (2004; 628 citations)	Literature review of positive orientation to school, school attachment, school bonding, school climate, school connection, school context, school engagement, school involvement, student satisfaction with school, student identification with school, teacher support, academic engagement terminology	A “common term to describe student relationships with school” (p. 275); used interchangeably with academic engagement Measures described: Ryan & Patrick (2001) self- regulated learning and disruptive behavior; Manlove (1998) operationalized as number of hours spent doing homework, grades, and test scores; Simons-Morton & Crump (2002) single variable examining academic motivation by asking if students pay attention in class, take school seriously, and want to do well academically; Finn (1993) included academic participation, identification with school, attendance, student arriving prepared, teacher report of student	N/A

	<i>See also:</i> Jimerson, Campos, & Greif (2003; 422 citations)	Literature review of school engagement, school bonding, school attachment, school commitment, motivation terminology	withdrawal and lack of compliance, number of office visits for misbehavior Defined as “having both a behavioral component, termed participation, and an emotional component, termed identification” (Finn & Voelkl, 1993, p. 249) Measured by observable behaviors related to academic effort and achievement	N/A
School Belongingness /Membership (363 articles)	Oldest Major Citation: Goodenow (1993; 1,069 citations)	Development and validation of a measure of adolescent students’ perceived belonging or psychological membership in the school environment <i>N</i> = 454	“The extent to which students feel personally accepted, respected, included, and supported by others in the school social environment” (p. 80) 18-item <i>Psychological Sense of School Membership (PSSM)</i> scale	<ul style="list-style-type: none"> • I feel like a real part of (name of school). • People here notice when I’m good at something. • It is hard for people like me to be accepted here. • Other students in this school take my opinions seriously. • Most teachers at (name of school) are interested in me.
	1 st Most Often Cited: Osterman (2000; 1,640 citations)	Literature review of school belongingness and membership	“Belongingness,” “relatedness,” “support,” “acceptance,” “membership,” or “sense of community” – “students’ perspectives about their own individual or collective experience of support and involvement, in home and school settings, with family, teachers, classes, or schools” Student self-report of 4 items that make up the <i>Relatedness</i> subscale of the <i>Patterns of Adaptive Learning Survey (PALS)</i>	N/A
	2 nd Most Often Cited: Roeser, Midgley, & Urdan (1996; 1,100 citations)	Role of personal achievement goals and feelings of school belonging in mediating the relation between perceptions of the school psychological environment and school-related beliefs, affect, and achievement, Grade 8 <i>N</i> = 296		<ul style="list-style-type: none"> • I feel like I belong in this school. • I feel like I am successful in this school. • I feel like I matter in this school. • I do not feel like I am important in this school.
School	Oldest Major	Associations between risk	Student self-report of single item	5-point Likert response

Connectedness (673 articles)	Citation: Neumark-Sztainer, Story, French, & Resnick (1997; 167 citations)	factors, health compromising behaviors, and protective factors such as school connectedness, Grades 6, 9, 12 $N = 123,132$	ranging from “I hate school” to “I like school very much”
	1 st Most Often Cited: Resnick et al. (1997; 4,571 citations)	National Longitudinal Study of Adolescent Health, Grades 7-12, examining association between school characteristics and average level of school connectedness in each school $N_{\text{Schools}} = 77,$ $N_{\text{Students}} = 83,074$	Student self-report of 5 items from the <i>National Longitudinal Study of Adolescent Health (Add Health)</i> <ul style="list-style-type: none"> • I feel close to people at this school. • I feel like I am part of this school. • I am happy to be at this school. • The teachers at this school treat students fairly. • I feel safe in my school.
	2 nd Most Often Cited: McNeely, Nonnemaker, & Blum (2002; 946 citations)	National Longitudinal Study of Adolescent Health, Grades 7-12, positive classroom management climates, extracurricular activities, tolerant discipline policies, small school size associated positively with higher school connectedness $N_{\text{Schools}} = 127,$ $N_{\text{Students}} = 75,515$	Student self-report of 5 items from the <i>National Longitudinal Study of Adolescent Health (Add Health)</i> <ul style="list-style-type: none"> • I feel close to people at this school. • I feel like I am part of this school. • I am happy to be at this school. • The teachers at this school treat students fairly. • I feel safe in my school.
	<i>See also:</i> Libbey (2004; 628 citations)	Literature review of positive orientation to school, school attachment, school bonding, school climate, school connection, school context, school engagement, school involvement, student	“An overarching measure with four aspects: Commitment, power, belonging, and belief in rules” (p. 274) Measures described: Brown & Evans (2002) conceptualized as “an overarching measure of commitment, power, belonging, and belief in N/A

		satisfaction with school, student identification with school, teacher support, academic engagement terminology	rules”; Eccles et al. (1997) included it under “school context” which encompassed school regulation, school facilitation of autonomy, and connection; Resnick et al. (1997) original 8-item measure of “student’s sense of safety, rule fairness, teacher support, and belonging”	
School Attachment (400 articles)	Oldest Major Citation: Hunt (1977; 5 citations)	Effects of school segregation on academic performance, efficacy, self-esteem, controlling for school attachment	Student self-report of 5-item Guttman scale asking about positive feelings in school, pride in school, being relaxed and confident while at school, the feeling that school is important, and thinking that school will help very much when one grows up	N/A
	1 st Most Often Cited: Becker & Luthar (2002; 386 citations)	$N_{\text{White}} = 215$, $N_{\text{IntegratedBlack}} = 74$, $N_{\text{SegregatedBlack}} = 146$ Literature review of academic and school attachment, teacher support, peer values, mental health as they relate to achievement performance	A “sense of closeness” between students and the school community to “enhance the development of intellectual growth, academic achievement, and emotional and social maturity” (Superintendent’s Middle Grade Task Force, 1987, p. 101)	N/A
	2 nd Most Often Cited: Dornbusch, Erickson, Laird, & Wong (2001; 279 citations)	Effects of family and school attachment on cigarette smoking, alcohol use, marijuana use, delinquency, and violent behavior $N = 13,568$	School attachment considered school connectedness and measured by student self-report of 8-item <i>School Connectedness</i> composite developed by Resnick et al. (1997)	<ul style="list-style-type: none"> • You feel close to people at your school? • You feel like you are part of your school? • You are happy to be at your school? • The teachers at your school treat students fairly? • You feel safe in your school? • Getting along with your teachers? • Getting along with other students? • How much do you feel that your teachers care about you?

	<i>See also:</i> Libbey (2004; 628 citations)	Literature review of positive orientation to school, school attachment, school bonding, school climate, school connection, school context, school engagement, school involvement, student satisfaction with school, student identification with school, teacher support, academic engagement terminology	A “common term for a sense of connection” (p. 274) Measures described: Mouton et al. (1996) “students reporting degree to which people at school like them”; Moody & Bearman (1998) 3-item <i>School Attachment</i> scale as part of <i>National Longitudinal Study of Adolescent Health (Add Health)</i> survey; Gottfredson et al. (1994) “student respect for teachers and the extent to which students care what teachers think of them”; Goodenow et al. (1993) subscale of <i>Psychological Sense of Membership Survey</i> ; Jenkins (1997) included school attachment as subscale within “school bond”	N/A
School Bonding (269 articles)	Oldest Major Citation: Hunt (1977; 5 citations)	Effects of school segregation on academic performance, efficacy, self-esteem, controlling for school attachment, Grades 9-12	Student self-report of 5-item Guttman scale asking about positive feelings in school, pride in school, being relaxed and confident while at school, the feeling that school is important, and thinking that school will help very much when one grows up	N/A
	1 st Most Often Cited: Catalano, Oesterle, & Fleming (2004; 661 citations)	$N_{\text{White}} = 215$, $N_{\text{IntegratedBlack}} = 74$, $N_{\text{SegregatedBlack}} = 146$ Two longitudinal studies of school connectedness/bonding on positive and negative behaviors, Grades 1-6 $N = 808$	School connectedness and school bonding considered same term, defined as “attachment, characterized by close affective relationships with those at school” and “commitment, characterized by an investment in school and doing well in school” (p. 252, from control theory; Hirschi, 1969)	N/A
	2 nd Most Often Cited: Libbey (2004; 628 citations)	Literature review of positive orientation to school, school attachment, school bonding, school climate, school connection, school context, school engagement, school involvement, student	“An umbrella term to encompass several aspects of a student’s relationship to school” (p. 274) Measures described: Hawkins et al. (1996) defined school bonding as attachment, an emotional link to school, and commitment, an investment in the group; Jenkins (1997) included school bonding as	N/A

		satisfaction with school, student identification with school, teacher support, academic engagement terminology	commitment, attachment, involvement, and belief in school rules	
	<i>See also:</i> Jimerson, Campos, & Greif (2003; 422 citations)	Literature review of school engagement, school bonding, school attachment, school commitment, motivation terminology	Defined as “degree of closeness or attachment to teachers and commitment to conventional school goals” (Eggert et al., 1994)	N/A
			Measured by good grades or feelings of commitment or attachment	
Teacher Caring Relationships (59 articles)	1 st Most Often Cited & Oldest Major Citation: Teven & McCroskey (1997; 430 citations)	Effects of perceived teacher caring on college students’ teacher evaluations, affective learning, and cognitive learning <i>N</i> = 235	22-item bipolar scale measuring students’ perception of teachers caring, created by the researchers for the purpose of the study	<ul style="list-style-type: none"> • Cares about me/Doesn’t care about me • Has my interests at heart/Doesn’t have my interests at heart • Self-centered/Not self-centered • Unconcerned with me/Concerned with me • Unresponsive/Responsive • Understands how I feel/Doesn’t understand how I feel • Doesn’t understand how I think/Understands how I think
	2 nd Most Often Cited: Teven & Hanson (2004; 144 citations)	Randomized experimental study, effects of exposure to low/high teacher caring and immediacy on college students’ perceptions of teachers’ credibility <i>N</i> =	Vignettes describing a teacher who has High Verbal Caring (e.g., “The instructor often makes encouraging comments to students which include ‘Good job!’”) or Low Verbal Caring (e.g., “The instructor often makes discouraging comments to students which include, ‘I get paid whether you pass or fail!’”)	N/A
Teacher	Oldest Major	Effects of students’ perception	Student response to Teacher Support subscale of	<ul style="list-style-type: none"> • Students have to watch

Support (1,355 articles)	Citation: Moos & Moos (1978; 196 citations)	of Classroom Environment, including teacher support, on student absenteeism <i>N</i> = 116	the <i>Classroom Environment Scale (CES; Trickett & Moos, 1974)</i> ; considered “relationship dimensions and assess the extent to which students and teachers support each other” (p. 265)	what they say in this class.
	1 st Most Often Cited: Klem & Connell (2004; 1,217 citations)	Effects of teacher support on student engagement, academic achievement, and behavior Grades 3-8 <i>N</i> = 3,097	Student self-report of 10 items making up <i>Experiences of Teacher Support</i> assessing the extent to which students feel that adults are involved with them, provide support for autonomy, and provide structure	<ul style="list-style-type: none"> • My teacher cares about how I do in school. • My teacher likes the other kids in my class better than me. • My teacher doesn’t explain why we have to learn certain things in school. • My teacher thinks what I say is important. • My teacher is fair with me; my teacher’s expectations of me are way off base.
	2 nd Most Often Cited: McNeely & Falci (2004; 372 citations)	Effects of “two dimensions of school connectedness,” perceived teacher support and social belonging, on the initiation, escalation, and reduction of health-risk behaviors, Grades 7-12 <i>N</i> = 20,745	Student self-report of 3 items from the <i>National Longitudinal Study of Adolescent Health (Add Health)</i>	<ul style="list-style-type: none"> • The teachers at your school treat students fairly. • Since school started this year, how often have you had trouble getting along with your teachers? • How much do you feel that your teachers care about you?
	<i>See also:</i> Libbey (2004; 628 citations)	Literature review of positive orientation to school, school attachment, school bonding, school climate, school connection, school context, school engagement, school involvement, student	“Most often nested within other measures such as school climate, attachment, belonging, and identification with school” (p. 277) Measures described: Resnick et al. (1997) included as part of school connectedness scale; Rosenfeld, Richman, & Bowen (2000) asked students to report	N/A

		satisfaction with school, student identification with school, teacher support, academic engagement terminology	on teacher-student relationships and whether they felt teachers cared; Ryan & Patrick (2001) measured teacher support to determine its relation to motivation and engagement in school	
School Support (682 articles)	Oldest Major Citation: McInerney (1991; 48 citations)	Comparison of Aboriginal, migrant, and Anglo Australian high school students on motivation, Grades 7-11 $N_{\text{Aboriginal}} = 496$, $N_{\text{migrant}} = 487$, $N_{\text{Anglo}} = 1,172$	“Degree to which the child perceived a supportive environment at school, as manifested through both teacher encouragement and support and positive peer support” (p. 165) Student responses to select items from 39-item <i>Facilitating Conditions Questionnaire</i> , designed to measure parental influence, peer influence, teacher influence, perceived value of school, and affect to school	<ul style="list-style-type: none"> If I try really hard to do well at school, I am picked on for being a “goodie goodie” by my friends.
	1 st Most Often Cited: Goodenow, Szalacha, & Westheimer (2006; 390 citations)	Effects of LGB school support groups on victimization and suicide attempts for sexual minority students, Grades 9-12 $N_{\text{schools}} = 52$, $N_{\text{students}} = 202$	1999 <i>Massachusetts Youth Risk Behavior Survey</i> (MYRBS; Massachusetts Department of Education, 2000) principal survey indicating whether “a support group for gay, lesbian, and bisexual students,” staff training, and policies designed to support students existed at their school	N/A
	2 nd Most Often Cited: Demaray & Malecki (2003; 332 citations)	Effects of perceived frequency and important of social support from parents, teachers, classmates, close friends, and school on bullying behavior, Grades 6-8 $N = 499$	Student self-report of social support from teachers, classmates, close friends, and the school as assessed by the <i>Child and Adolescent Social Support Scale – Revised (CASSS-R)</i> ; Malecki & Demaray, 2002)	<p>My teacher(s)...</p> <ul style="list-style-type: none"> listens if I'm upset cares about me is fair to me understands me <p>My classmates...</p> <ul style="list-style-type: none"> act nice to me ask me to join activities

¹Number of peer-reviewed scholarly journal articles for which the keyword appeared in the abstract, keyword, and/or title on Proquest databases

²Number of citations according to the Google Scholar database

Table 2

Research Questions 1-4, Hypotheses, Variables, and Analyses

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Theoretical Question	Hypotheses	IVs	DVs	Analysis
<p>Q1a: <i>Main effect of LGB:</i> Do self-identified LGB students experience significantly worse academic and psychological outcomes compared to their heterosexual peers?</p>	<p>H1a: Yes, compared to heterosexual peers, self-identified LGB students will report significantly:</p> <ul style="list-style-type: none"> a) lower perceptions of school safety, b) lower self-reported grades, c) lower <i>School Motivation</i>, d) higher <i>Truancy</i>, and e) higher <i>Psychological Distress</i>. 	Observed variable: Sexual Orientation	<p>Observed variables: Perception of school safety item, self-reported grades</p> <p>Latent variables: <i>Truancy, School Motivation, Psychological Distress</i></p>	Mod. model in SEM; Odds ratios
<p>Q1b: <i>Main effect of SOV:</i> Do students with SOV experience significantly worse academic and psychological outcomes compared to their non-SOV peers?</p>	<p>H1b: Yes, compared to non-SOV peers, students who experience SOV will report significantly:</p> <ul style="list-style-type: none"> a) lower perceptions of school safety, b) lower self-reported grades, c) lower <i>School Motivation</i>, d) higher <i>Truancy</i>, and e) higher <i>Psychological Distress</i>. 	Observed variable: SOV		
<p>Q2: <i>Interaction (LGB*SOV):</i> Do self-identified LGB students who are also victims of SOV experience significantly worse academic and psychological outcomes compared to their non-SOV LGB peers and SOV heterosexual peers?</p>	<p>H2: Yes, compared to non-SOV LGB peers and heterosexual peers, LGB students who also experience SOV will report significantly:</p> <ul style="list-style-type: none"> a) lower perceptions of school safety, b) lower self-reported grades, c) lower <i>School Motivation</i>, d) higher <i>Truancy</i>, and e) higher <i>Psychological Distress</i>. 	Interaction term of SOV item and Sexual orientation item (two-way interaction)	<p>Observed variables: Perception of school safety item, self-reported grades</p> <p>Latent variables: <i>Truancy, School Motivation, Psychological Distress</i></p>	Mod. model in SEM; Odds ratios

<p>Q3a: <i>Two-Way Moderation:</i> Does <i>School Support</i> (i.e., feeling supported by a teacher or other school adult) significantly protect LGB students from negative academic and psychological outcomes?</p>	<p>H3a: Yes, <i>School Support</i> will significantly moderate the negative effect of LGB status on the following academic and psychological outcomes: a) perceptions of school safety, b) self-reported grades, c) <i>School Motivation</i>, d) <i>Truancy</i>, and e) <i>Psychological Distress</i>.</p>	<p>Interaction term of SOV and <i>School Support</i> (two-way interaction)</p>	<p>Observed variables: Perception of school safety item, self-reported grades</p>	
<p>Q3b: <i>Two-Way Moderation:</i> Does <i>School Support</i> (i.e., feeling supported by a teacher or other school adult) significantly protect students who experience SOV from negative academic and psychological outcomes?</p>	<p>H3b: Yes, <i>School Support</i> will significantly moderate the negative effect of SOV on the following academic and psychological outcomes: a) perceptions of school safety, b) self-reported grades, c) <i>School Motivation</i>, d) <i>Truancy</i>, and e) <i>Psychological Distress</i>.</p>	<p>Interaction term of Sexual Orientation and <i>School Support</i> (two-way interaction)</p>	<p>Latent variables: <i>Truancy</i>, <i>School Motivation</i>, <i>Psychological Distress</i></p>	
<p>Q4: <i>Three-Way Moderation:</i> Does <i>School Support</i> (i.e., feeling supported by a teacher or other school adult) significantly protect students who self-identify as LGB and experience SOV from negative academic and psychological outcomes?</p>	<p>H4: Yes, <i>School Support</i> will significantly moderate the negative effect of the interaction of LGB status and SOV on the following academic and psychological outcomes: a) perceptions of school safety, b) self-reported grades, c) <i>School Motivation</i>, d) <i>Truancy</i>, and e) <i>Psychological Distress</i>.</p>	<p>Interaction term of SOV*Sexual Orientation interaction term and <i>School Support</i> (three-way interaction)</p>	<p>Observed variables: Perception of school safety item, self-reported grades</p> <p>Latent variables: <i>Truancy</i>, <i>School Motivation</i>, <i>Psychological Distress</i></p>	<p>Mod. model in SEM; Odds ratios</p>

Table 3

Survey Items Utilized

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Variable Type	Construct	Item(s)	Possible Responses
Predictor (Observed)	Sexual Orientation	Question A113 on the CHKS Core Module: “Which of the following best describes you?”	Categorical: <ul style="list-style-type: none"> • Heterosexual • Gay or Lesbian or Bisexual • Transgender • Not sure • Decline to respond.
Predictor (Observed)	Sexual Orientation Victimization (SOV)	Question A103_A92 on the CHKS Core Module: “During the past 12 months, how many times on school property were you harassed or bullied for any of the following reasons?”, with “Because you are gay or lesbian or someone thought you were” as a possible reason.	Interval range of incidents: <ul style="list-style-type: none"> • 0 times • 1 time • 2 or 3 times • 4 or more times. <i>Note:</i> For the purposes of the study, a dummy variable was created to categorize students who responded “0 times” as non-SOV and students who responded either “1 time,” “2 or 3 times,” or “4 or more times” as SOV.
Moderator (Latent)	<i>School Support</i>	QA23_A22 “At my school there is a teacher or adult, who really cares about me.” QA24_A23 “At my school there is a teacher or adult, who tells me when I do a good job.” QA25_A24 “At my school there is a teacher or adult, who notices when I’m not there.” QA26_A25 “At my school there is a teacher or adult, who always wants me to do my best.” QA27_A26 “At my school there is a teacher or adult, who listens to me when I have something to say.”	<ul style="list-style-type: none"> • 1 = Not at all true • 2 = A little true • 3 = Pretty much true • 4 = Very much true

		QA27_A26 “At my school there is a teacher or adult, who believes I will be a success”	
Outcome (Observed)	Grades	QA11_A10 “In the past 12 months, how would you describe the grades you mostly received?”	<ul style="list-style-type: none"> • Mostly A’s (coded to 4.0) • A’s and B’s (coded to 3.5) • Mostly B’s (coded to 3.0) • B’s and C’s (coded to 2.5) • Mostly C’s (coded to 2.0) • C’s and D’s (coded to 1.5) • Mostly D’s (coded to 1.0) • Mostly F’s (coded to 0.5) <p><i>Note:</i> For the purposes of analysis, responses were reverse-coded and coded to reflect common Grade Point Averages (GPAs; i.e., Mostly A’s = 4.0, A’s and B’s = 3.5, etc.)</p>
Outcome (Observed)	School Safety	QA18_A17 “I feel safe in my school.”	5-point Likert scale of responses ranging from “Strongly Disagree” to “Strongly Agree.”
Outcome (Latent)	<i>School Motivation</i>	QA19_A18 “I try hard to make sure that I am good at my schoolwork.”	
		QA20_A19 “I try hard at school because I am interested in my work.”	
		QA21_A20 “I work hard to try to understand new things at school.”	
		QA22_A21 “I am always trying to do better in my schoolwork.”	
Outcome (Latent)	<i>Truancy</i>	QA13_A12J asking if students missed school due to being “behind in schoolwork or not prepared for a test of class assignment” in the past 30 days;	Yes/No
		QA13_A12K asking if students missed school due to being “bored with or uninterested in school”	
		QA12_A11: “In the past 12 months, about how many times did you skip school or cut classes?”	<ul style="list-style-type: none"> • 0 times • 1-2 times • A few times • Once a month • Once a week

			• More than once a week
Outcome (Latent)	<i>Psychological Distress</i>	QA108_A97: “In the past 12 months, did you ever feel so sad or hopeless almost every day for 2 or more weeks that you stopped doing some usual activities?”	Yes/No
		QA109/V10_A109: “In the past 12 months, did you ever seriously consider attempting suicide?”	

Table 4

Overall Demographic Sample Proportions

	No SOV		SOV		Heterosexual		LGB		Total	
	Row									
	<i>N</i>	Row %	<i>N</i>	%	<i>N</i>	Row %	<i>N</i>	Row %	<i>N</i>	Col. %
Heterosexual	213,528	95%	10,241	5%	-	-	-	-	223,769	95%
LGB	6,201	55%	5,094	45%	-	-	-	-	11,295	5%
6 th Grade	1,598	92%	132	8%	1,685	97%	52	3%	1,737	1%
7 th Grade	64,891	91%	6,163	9%	69,148	97%	2,349	3%	71,497	31%
8 th Grade	4,569	92%	399	8%	4,734	95%	266	5%	5,000	2%
9 th Grade	69,471	94%	4,714	6%	70,669	95%	3,885	5%	74,554	32%
10 th Grade	8,168	94%	471	6%	8,122	93%	570	7%	8,692	4%
11 th Grade	58,556	95%	2,827	5%	58,330	95%	3,320	5%	61,650	26%
12 th Grade	5,603	96%	252	4%	5,502	93%	386	7%	5,888	3%
American Indian or Alaska Native	7,839	94%	499	6%	7,973	95%	414	5%	8,387	4%
Asian American	21,704	94%	1,378	6%	22,317	96%	837	4%	23,154	12%
Black	9,917	94%	657	6%	10,017	94%	648	6%	10,665	5%
Native Hawaiian or Pacific Islander	4,192	93%	330	7%	4,314	95%	230	5%	4,544	2%

Mixed	84,030	93%	6,413	7%	86,163	95%	4,787	5%	90,950	45%
White	59,135	93%	4,327	7%	43,062	95%	60,783	2,942	63,725	32%
Latino	120,883	94%	7,723	6%	123,146	95%	6,203	5%	129,349	56%

Note. SOV = Sexual Orientation Victimization, where 1 = SOV, 0 = no SOV.

Table 5

Overall Sample Descriptives for Variables of Interest

Predictors	Moderator								Outcomes						
	<i>School Support</i>		Grades		School Safety		<i>School Motivation</i>		<i>Truancy</i>			<i>Psychological Distress</i>			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	% Truant (Being Behind)	% Truant (Boredom)	Freq. of Truancy Mean SD		% Depressed	% Suicidal	
No SOV	17.31	4.64	2.98	0.87	3.75	0.97	15.70	3.29	6%	4%	1.67	1.12	26%	13%	
SOV	16.54	4.87	2.86	0.93	3.34	1.10	15.11	3.50	9%	7%	1.77	1.19	61%	44%	
Heterosexual	17.30	4.64	3.02	1.73	3.74	0.97	15.72	3.29	6%	4%	1.67	1.12	27%	13%	
LGB	16.46	4.99	3.52	1.89	3.40	1.07	14.63	3.50	11%	9%	1.95	1.35	62%	45%	
Hetero, No SOV	17.33	4.63	2.99	0.87	3.75	0.97	15.74	3.28	6%	4%	1.67	1.11	23%	12%	
Hetero, SOV	16.73	4.78	2.94	0.91	3.39	1.10	15.35	3.47	8%	6%	1.70	1.12	54%	36%	
LGB, No SOV	16.71	4.96	2.74	0.94	3.53	1.04	14.65	3.49	10%	9%	1.97	1.38	53%	37%	
LGB, SOV	16.17	5.01	2.71	0.96	3.24	1.10	14.62	3.51	11%	9%	1.92	1.31	73%	56%	

Note. SOV = Sexual Orientation Victimization, where 1 = SOV, 0 = no SOV. Composite means provided for latent variables *School Support* and *School Motivation*. Percentages provided for dichotomous variables Truant (Being Behind), Truant (Boredom), Depressed, and Suicidal.

Table 6

Mischievous Response Items Utilized in Sensitivity Analysis

Items	Responses Coded as Mischievous
QA38: <i>How many times have you used cocaine, methamphetamine, or any amphetamine in your lifetime?</i>	<ul style="list-style-type: none"> • 1 time (1.0%) • 2 times (0.5%) • 3 times (0.3%) • 4-6 times (0.2%) • 7 or more times (0.8%)
QA40: <i>How many times have you used ecstasy, LSD, or other psychedelics in your lifetime?</i>	<ul style="list-style-type: none"> • 1 time (1.5%) • 2 times (0.7%) • 3 times (0.4%) • 4-6 times (0.3%) • 7 or more times (0.8%)
QA41: <i>How many times have you used prescription painkillers or tranquilizers in your lifetime?</i>	<ul style="list-style-type: none"> • 2 times (1.9%) • 3 times (1.1%) • 4-6 times (0.8%) • 7 or more times (3.2%)
QA42: <i>How many times have you used diet pills in your lifetime?</i>	<ul style="list-style-type: none"> • 1 time (1.0%) • 2 times (0.6%) • 3 times (0.4%) • 4-6 times (0.2%) • 7 or more times (2.1%)
QA94_A83: <i>In the past 12 months, how many times have you carried a gun?</i>	<ul style="list-style-type: none"> • 1 time (0.9%) • 2 to 3 times (0.5%) • 4 or more times (0.8%)
QA104_A93: <i>In the past 12 months how many times were you harassed or bullied because of a physical or mental disability on school property?</i>	<ul style="list-style-type: none"> • 1 time (1.7%) • 2 to 3 times (1.0%) • 4 or more times (1.2%)

Table 7

Cell Sizes and Percentages by Reported Group Affiliation and Mischievous Response Index (MRI)

MRI	Heterosexual		LGB		No SOV		SOV		Total	
	<i>N</i>	Col. %	<i>N</i>	Col. %	<i>N</i>	Col. %	<i>N</i>	Col. %	<i>N</i>	%
Total	235,007	100%	13,644	100%	272,688	100%	24,658	100%	248,651	100%
0	201,542	86%	8,699	64%	198,042	87%	11,140	61%	210,241	85%
1	23,419	10%	2,689	20%	21,687	10%	4,195	23%	26,108	11%
2	5,883	3%	1,114	8%	5,423	2%	1,488	8%	6,997	3%
3	2,469	1%	557	4%	2,417	1%	562	3%	3,026	1%
4	1,160	1%	313	2%	1,040	1%	378	2%	1,473	1%
5	385	<1%	172	1%	239	<1%	290	2%	557	<1%
6	149	<1%	100	1%	37	<1%	207	1%	249	<1%

Table 8

Fit Indices for All Tested Measurement Model EFAs and CFAs

Variable	Analysis	Model	χ^2	<i>df</i>	<i>p</i> -value	RMSEA	90% CI	CFI	TLI	SRMR
Outcome	EFA	1-Factor	45995.88	27	<.001	.11	[.11, .12]	.80	.74	.09
		2-Factor	20662.10	19	<.001	.09	[.09, .09]	.91	.83	.05
		3-Factor	1304.50	12	<.001	.03	[.03, .03]	.99	.98	.01
		4-Factor	49.62	6	<.001	.01	[.01, .01]	>.99	>.99	<.01
Outcome	CFA	3-Factor	7726.13	24	<.001	.04	[.04, .04]	.98	.97	.03
Moderator	CFA									
School										
Support		1-Factor	9537.11	9	<.001	.06	[.06, .06]	.99	.98	.02

Note. Final measurement models for both latent moderator and outcome variables presented in boldface.

Table 9

Geomin Rotated Factor Loadings of 3-Factor EFA Solution (Final Selected Solution) for Outcome Variables

Indicator	Variable Label	Factor		
		School Motivation	Truancy	Psychological Distress
A18_A17	Good at school	.40	.03	-.17
A19_A18	Try hard interest	.75	-.03	.01
A20_A19	Understand	.78	-.03	-.02
A21_A20	Do better	.85	.01	.02
A12_A11	Missed School Truancy frequency	-.09	.45	.02
A13_A12J	Missed School Behind in school	.06	.47	.01
A13_A12K	Missed School Bored with school	< .01	.64	-.05
A108_A97	Depressed mood	.01	.02	.74
A109	Suicidal thoughts	-.01	< -.01	.61

Note. Bolded loadings represent indicators loading on respective factor. Selection criteria: loading > .30.

Table 10

Geomin Rotated Factor Loadings of 4-Factor EFA Solution for Outcome Variables

Indicator	Variable Label	Factor			
		1	2	3	4
A18_A17	Good at school	.33	.03	-.16	.20
A19_A18	Try hard interest	.71	-.03	.02	.16
A20_A19	Understand	.85	-.01	-.03	-.14
A21_A20	Do better	.83	.01	.02	.01
A12_A11	Truancy frequency	-.18	.48	.02	-.20
A13_A12J	Behind in school	.03	.47	.03	.07
A13_A12K	Bored with school	-.02	.61	-.02	.04
A108_A97	Depressed mood	.01	.02	.74	.01
A109	Suicidal thoughts	-.01	< .01	.61	-.01

Note. Bolded loadings represent indicators loading on respective factor. Selection criteria: loading > .30.

Table 11

Geomin Rotated Factor Loadings of 3-Factor CFA and Omega for Outcome Variables

Indicator	Variable Label	Factor		
		School Motivation	Truancy	Psychological Distress
A18_A17	Good at school	.40	.03	-.17
A19_A18	Try hard interest	.75	-.03	.01
A20_A19	Understand	.78	-.03	-.02
A21_A20	Do better	.85	.01	.02
A12_A11	Truancy frequency	-.09	.45	.02
A13_A12J	Behind in school	.06	.47	.01
A13_A12K	Bored with school	< .01	.64	-.05
A108_A97	Depressed mood	.01	.02	.74
A109	Suicidal thoughts	-.01	< -.01	.61
<i>McDonald's Total Omega (ω_t) by Factor</i>		<i>.87</i>	<i>-</i>	<i>.60</i>

Note. Bolded loadings represent indicators loading on respective factor. Selection criteria: loading > .30.

Table 12

Geomin Rotated Factor Loadings and Omega for Latent Moderator School Support

Indicator	Variable Label	Factor School Support
	At my school there is a teacher or adult who...	
A23_A22	really cares about me.	.74
A19_A18	tells me when I do a good job.	.77
A20_A19	notices when I'm not there.	.68
A21_A20	always wants me to do my best.	.80
A12_A11	listens to me when I have something to say.	.78
A13_A12J	believes I will be a success.	.80
<i>McDonald's Total Omega (ω_t)</i>		<i>.89</i>

Note. Bolded loadings represent indicators loading on respective factor. Selection criteria: loading > .30.

Table 13

Fit Statistics for Model 0 and Model 1

Model	Estimation	<i>df</i>	Δdf	<i>LL</i>	ΔLL	$\frac{\Delta LL}{p\text{-value}}$	<i>ABIC</i>	χ^2	$\frac{\chi^2}{p\text{-value}}$	RMSEA	90% CI	CFI	TL I
Model 0	WLSMV	78	-	-	-	-	-	$2.870e^3$	<.001	.03	[.03, .03]	.96	.95
Model 0	MLR	78	-	$-3.947e^6$	-	-	$7.896e^6$	-	-	-	-	-	-
Model 1	MLR	90	12	$-3.949e^6$	$3.147e^3$	<.001	$7.899e^6$	-	-	-	-	-	-

Note. *df* = degrees of freedom; Δdf = change in degrees of freedom; *LL* = raw H₀ log-likelihood value; ΔLL = log-likelihood ratio test statistic (Maslowsky et al., 2015); ΔLL *p*-value = significance of log-likelihood ratio test according to chi-square distribution; *ABIC* = sample-adjusted Bayesian information criterion; χ^2 = chi-square test of model fit; χ^2 *p*-value = significance of chi-square test of model fit; RMSEA = root-mean square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index.

Table 14

Standardized and Unstandardized Regression Results for Moderated Moderator Model

Predictors	Outcomes									
	Grades		School Safety		School Motivation		Truancy		Psychological Distress	
SOV	-0.004	(-0.020)	-0.082**	(-0.326)**	-0.017**	(-0.049)**	0.029**	(0.059)**	0.228**	(1.470)**
LGB	-0.040**	(-0.241)**	-0.038**	(-0.176)**	-0.065**	(-0.221)**	0.105**	(0.243)**	0.195**	(1.447)**
<i>Support</i>	0.155**	(0.283)**	0.354**	(0.498)**	0.400**	(0.417)**	-0.212**	(-0.150)**	-	(-0.497)**
SOV x LGB (w1)	<0.001	(0.002)	0.010*	(0.070)*	0.015**	(0.074)**	-0.022**	(-0.076)**	-	(-0.572)**
SOV x <i>Support</i> (w2b)	-0.005	(-0.040)	0.001	(0.005)	-0.010*	(-0.041)*	0.002	(0.006)	0.005	(0.046)
LGB x <i>Support</i> (w2a)	-0.005*	(-0.011)*	-0.002	(-0.011)	-0.006	(-0.028)	0.020**	(0.067)**	0.019**	(0.198)**
SOV x LGB x <i>Support</i> (w3)	0.001	(0.006)	-0.001	(-0.009)	0.002	(0.015)	-0.003	(-0.014)	-0.009*	(-0.136)*

Note. SOV = Sexual Orientation Victimization, where 1 = SOV, 0 = no SOV; LGB = Sexual Orientation, where 1 = LGB, 0 = Hetero; *Support* = moderator School Support. Unstandardized coefficients reported in parentheses. * $p < .05$, ** $p < .01$.

Table 15

Conditional Effect Estimates by Outcome

2-Way Interactions		3-Way Interactions	Grades		School Safety		<i>School Motivation</i>		<i>Truancy</i>		<i>Psych. Distress</i>	
			Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
LGB	Low <i>Support</i>		-0.666^{ac}	0.035					0.405^{ac}	0.023	2.721^{ac}	0.072
	High <i>Support</i>		0.208^{bc}	0.037					0.054^{bc}	0.025	0.974^{bc}	0.079
	Δ_{LGB}		0.873^e	0.065					-0.351^e	0.026	-1.747^e	0.136
Hetero	Low <i>Support</i>		-0.547^{ad}	0.009					0.297^{ad}	0.006	1.209^{ad}	0.020
	High <i>Support</i>		0.572^{bd}	0.009					-0.297^{bd}	0.006	-1.209^{bd}	0.020
	Δ_{Hetero}		1.119^e	0.017					-0.594^e	0.012	-2.418^e	0.040
LGB	No SOV				-0.187^{ac}	0.013	-0.255^a	0.011	0.243^a	0.011	2.160^{ac}	0.058
	SOV				-0.481^{bc}	0.015	-0.256^b	0.012	0.231^b	0.012	3.804^{bc}	0.078
	Δ_{LGB}				-0.295^e	0.020	-0.001 ^d	0.016	-0.012 ^d	0.016	1.644^e	0.066
Hetero	No SOV				0.033^{ad}	0.002	<0.001 ^{ac}	<0.001	<0.001 ^{ac}	<0.001	<0.001 ^{ad}	<0.001
	SOV				-0.333^{bd}	0.011	-0.078^{bc}	0.008	0.068^{bc}	0.009	2.187^{bd}	0.053
	Δ_{Hetero}				-0.365^e	0.011	-0.078^d	0.008	0.068^d	0.009	2.187^e	0.053
No SOV	Low <i>Support</i>						-0.820^c	0.006				
	High <i>Support</i>						0.820^{bc}	0.006				
	$\Delta_{No SOV}$						1.639^e	0.012				
SOV	Low <i>Support</i>						-0.788^d	0.022				
	High <i>Support</i>						0.692^{bd}	0.022				
	Δ_{SOV}						1.480^e	0.041				
LGB	No SOV	Low <i>Support</i>									2.794^{ab}	0.082
		High <i>Support</i>									1.260^a	0.134
	SOV	Low <i>Support</i>									4.458^{ab}	0.107
		High <i>Support</i>									2.574^{ab}	0.158

Hetero	No SOV	Low <i>Support</i>	0.756 ^{ab}	0.018
		High <i>Support</i>	-1.511 ^{ab}	0.035
	SOV	Low <i>Support</i>	3.021 ^{ab}	0.075
		High <i>Support</i>	0.813 ^b	0.111

Note. SOV = Sexual Orientation Victimization; *Support* = moderator School Support. Binary interactions (LGBxSOV) tested at each level of the observed variables (0,1) and latent interactions tested at +/- 2 SD *Support*; Statistically nonzero ($p < .01$) estimates in boldface; ^{a, b, c, d, e} Statistically significantly different ($p < .01$).

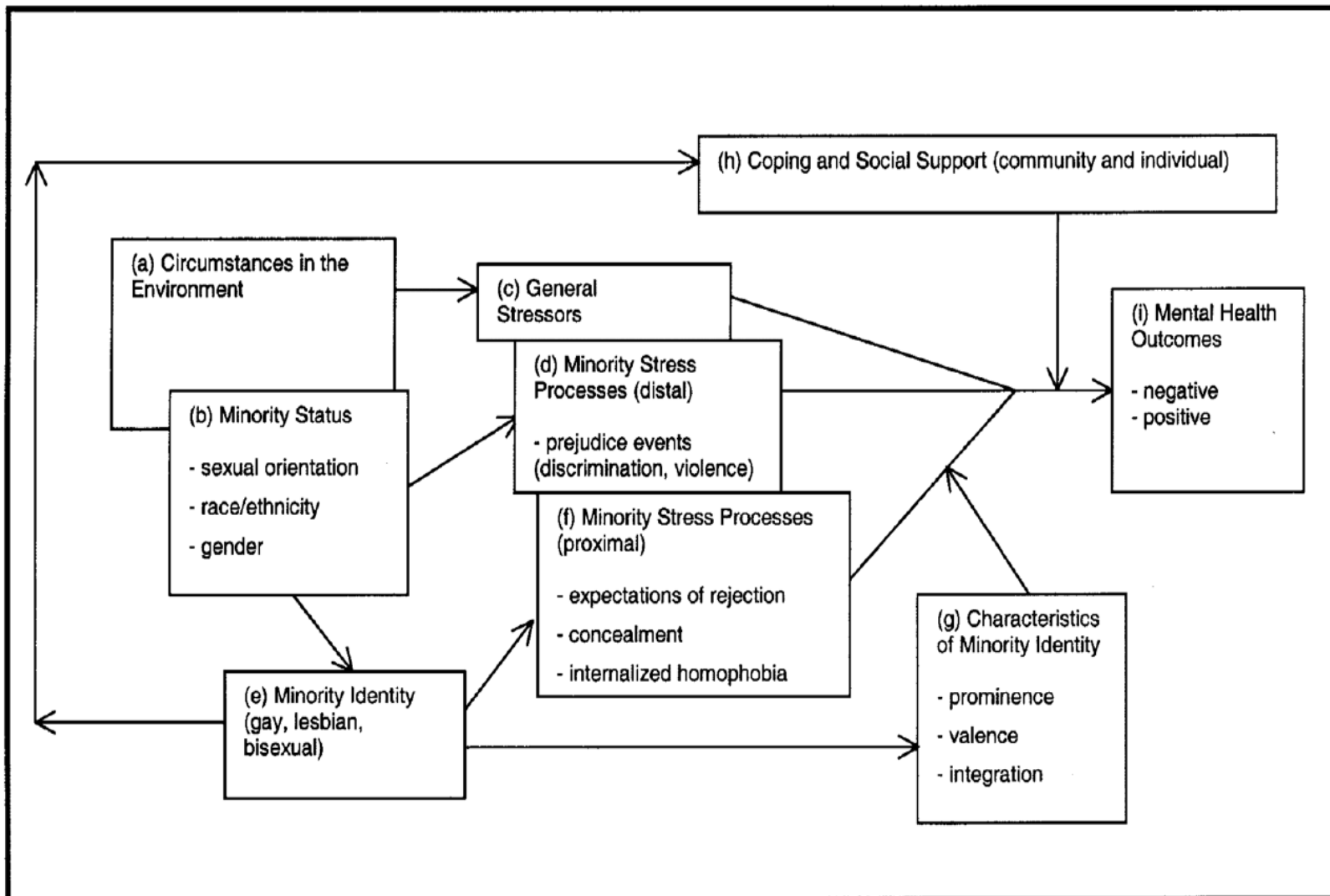


Figure 1. Minority stress model (Meyer, 2003).

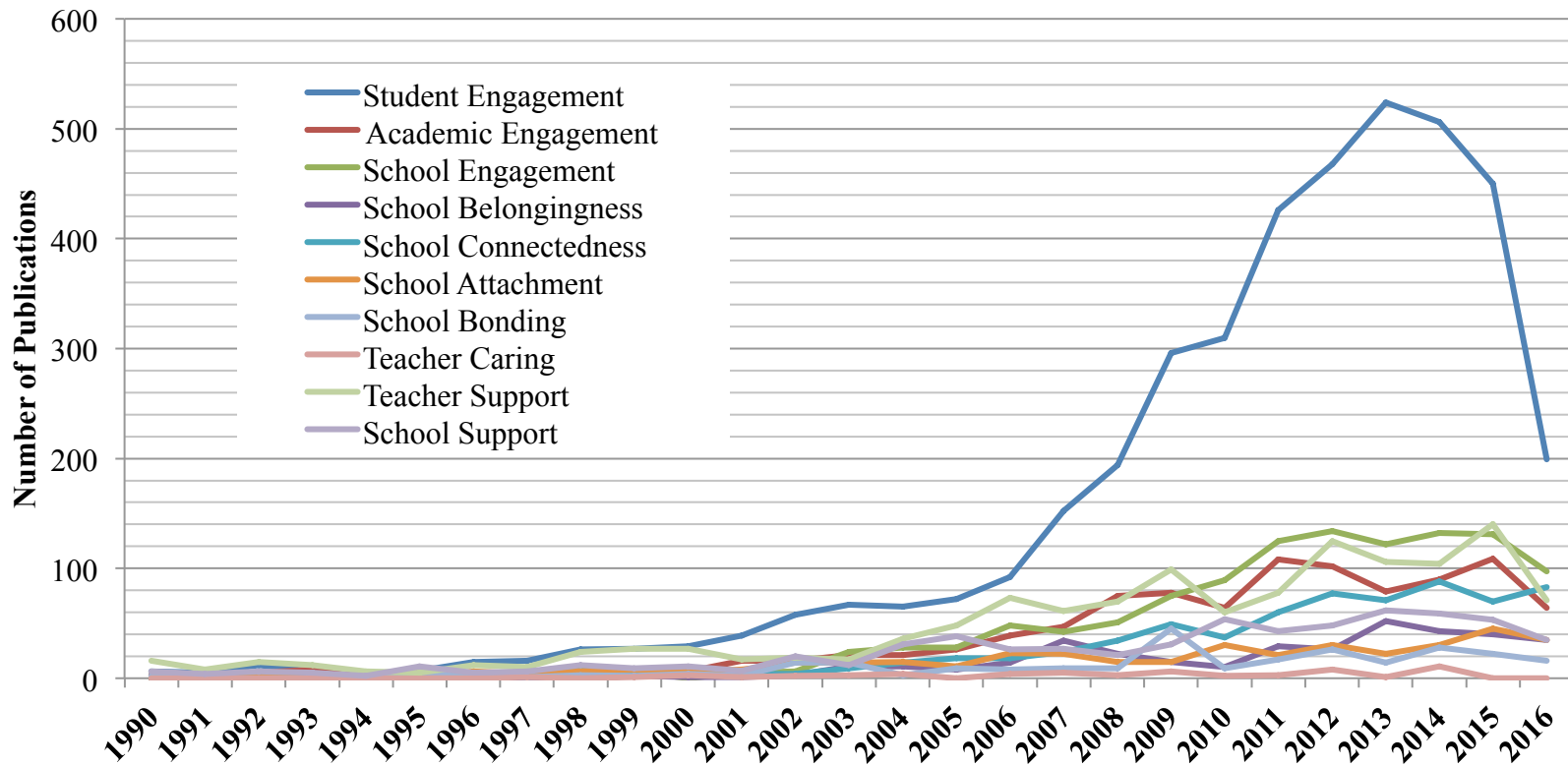


Figure 3. Number of peer-reviewed journal articles including term in abstract, keyword, and/or title by year (all terms).

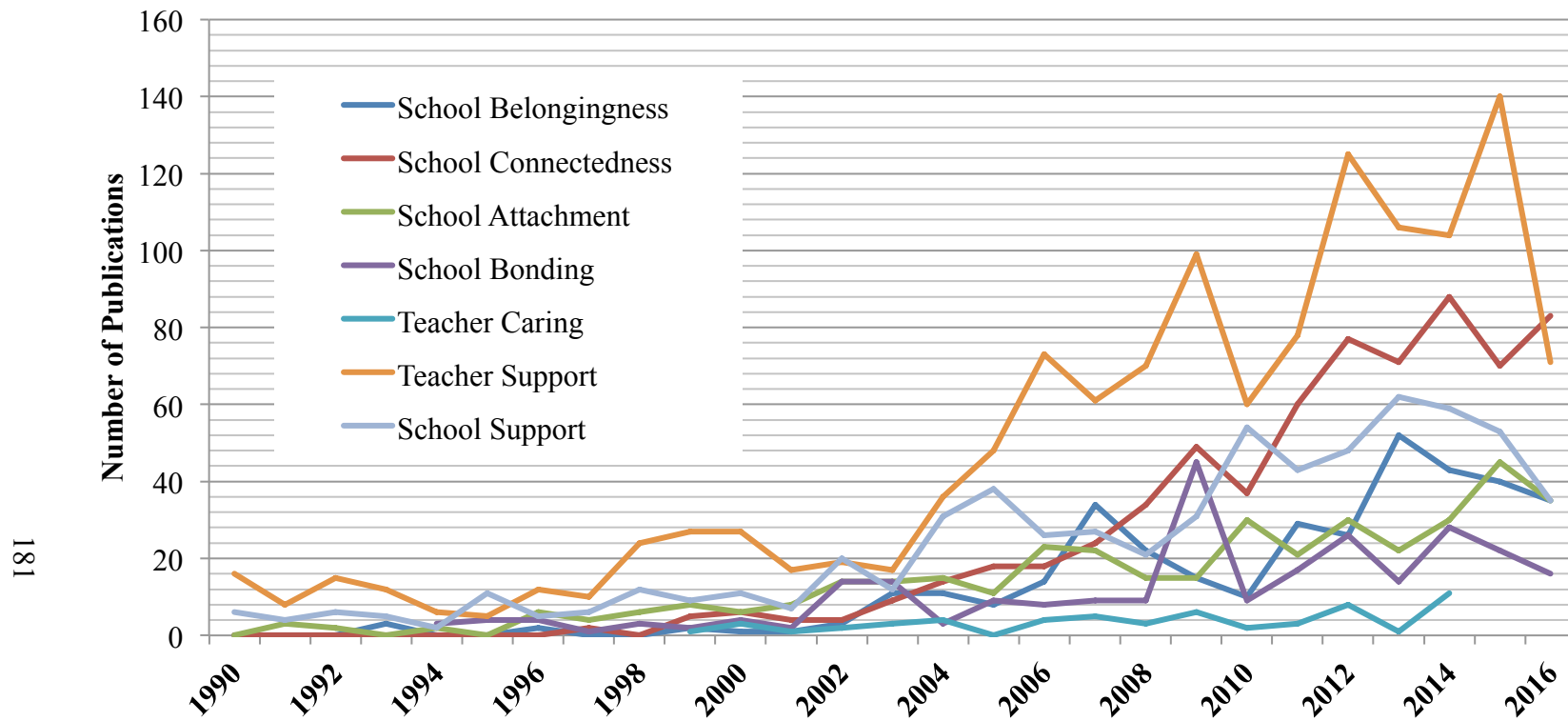
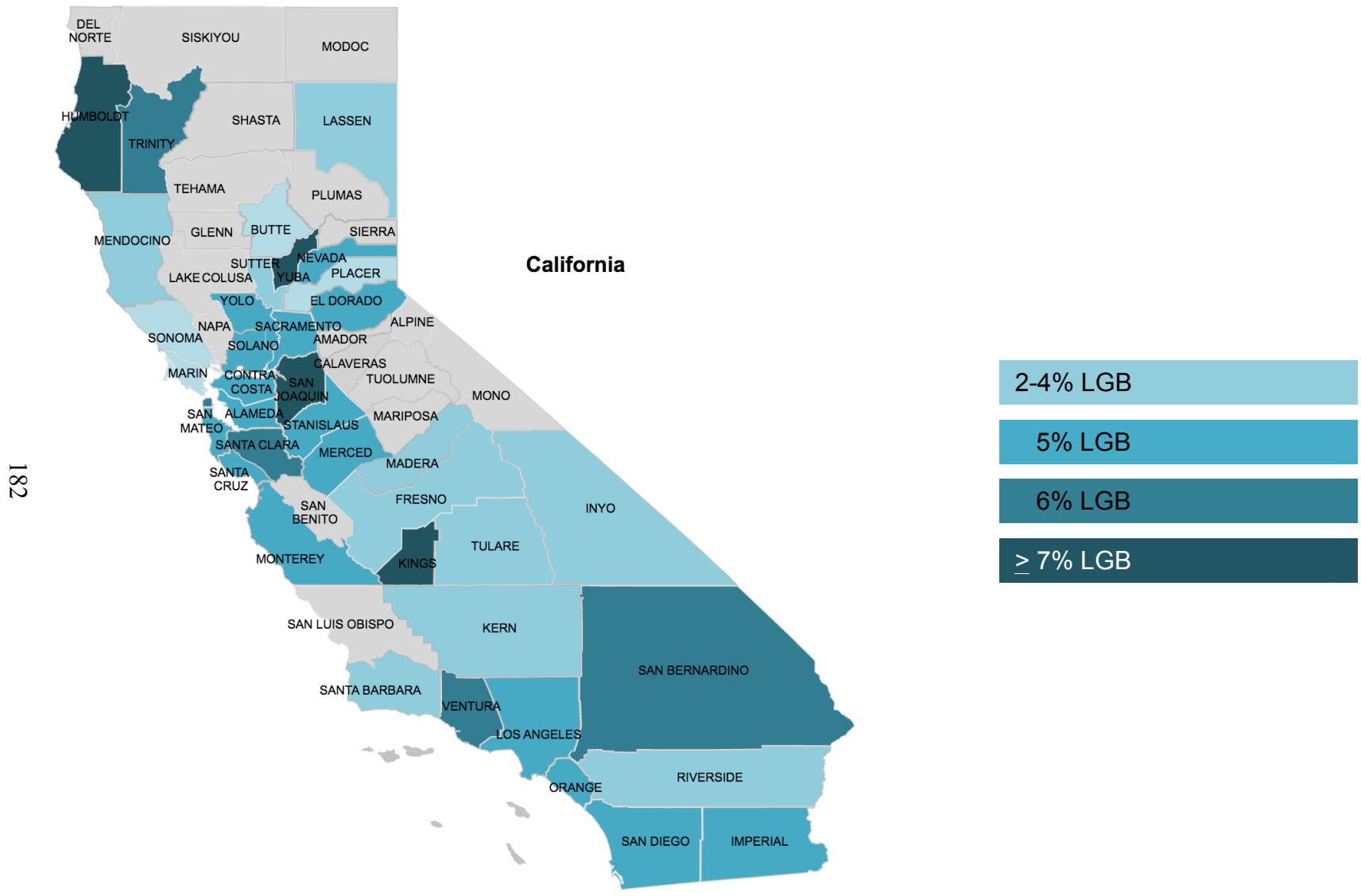


Figure 4. Number of peer-reviewed journal articles including term in abstract, keyword, and/or title by year (selected terms).



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Figure 5. Concentration of LGB-identified students by counties represented in sample.

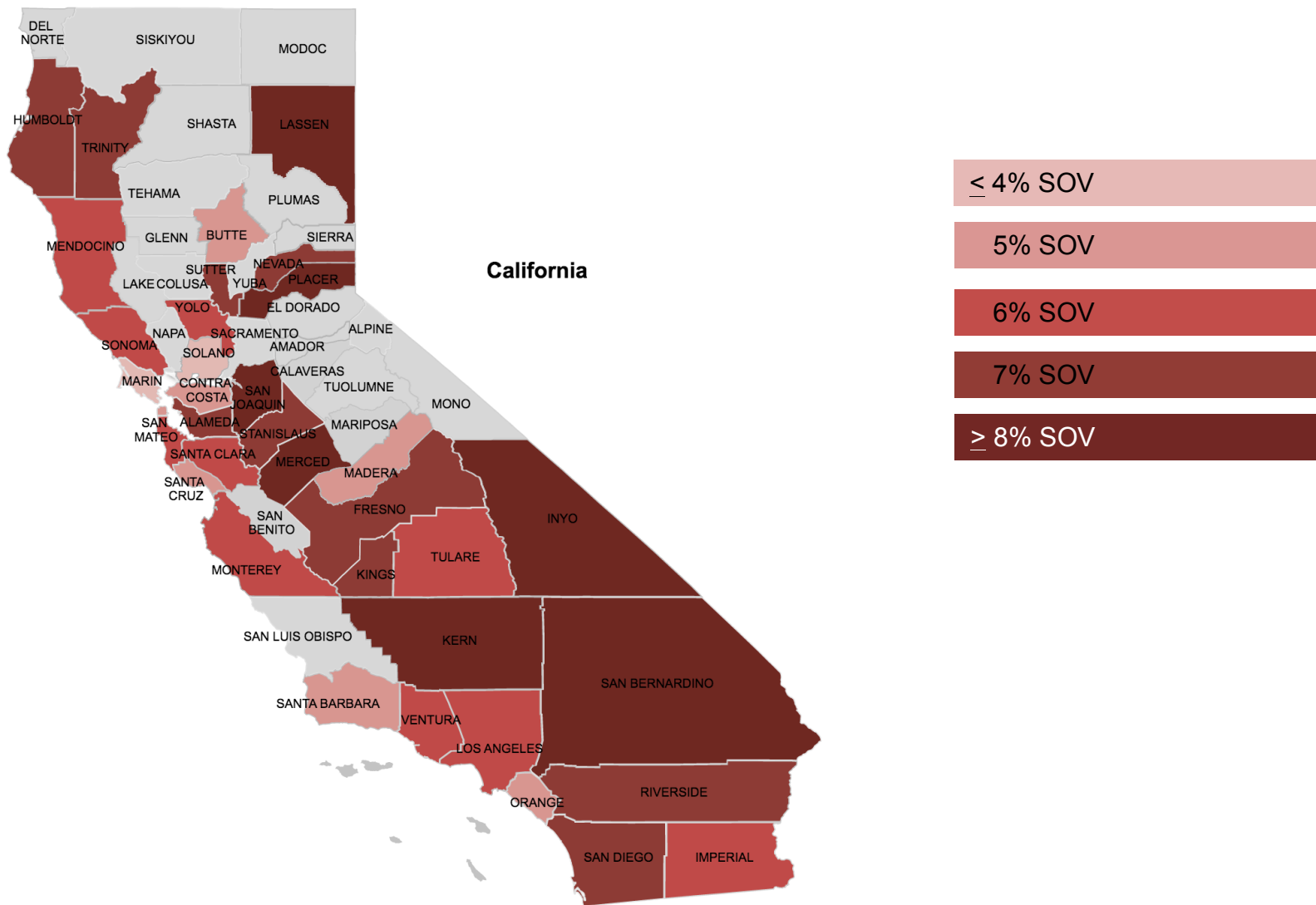


Figure 6. Concentration of students reporting SOV by counties represented in sample.

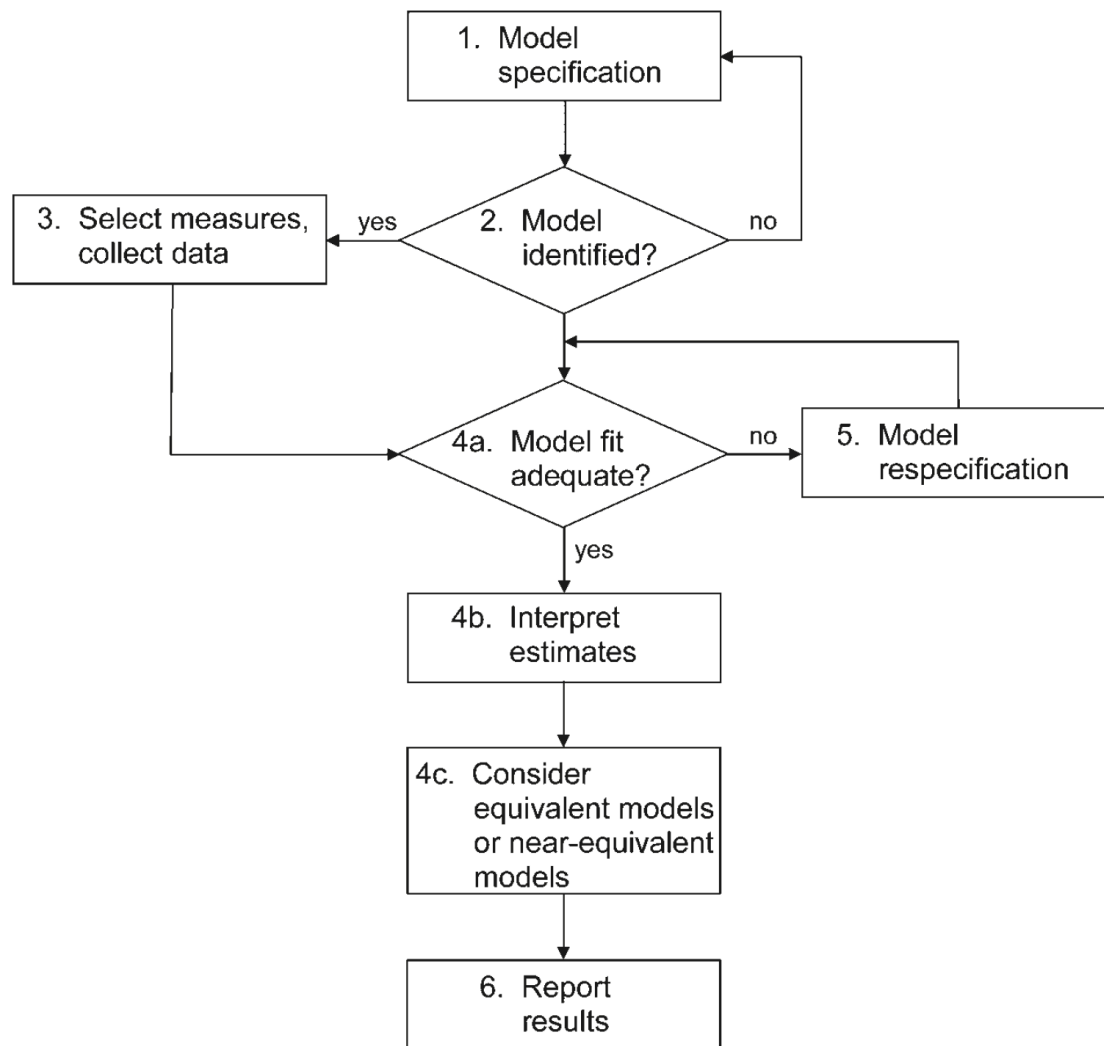


Figure 7. Flowchart of the basic steps of SEM (Kline, 2011, p. 92).

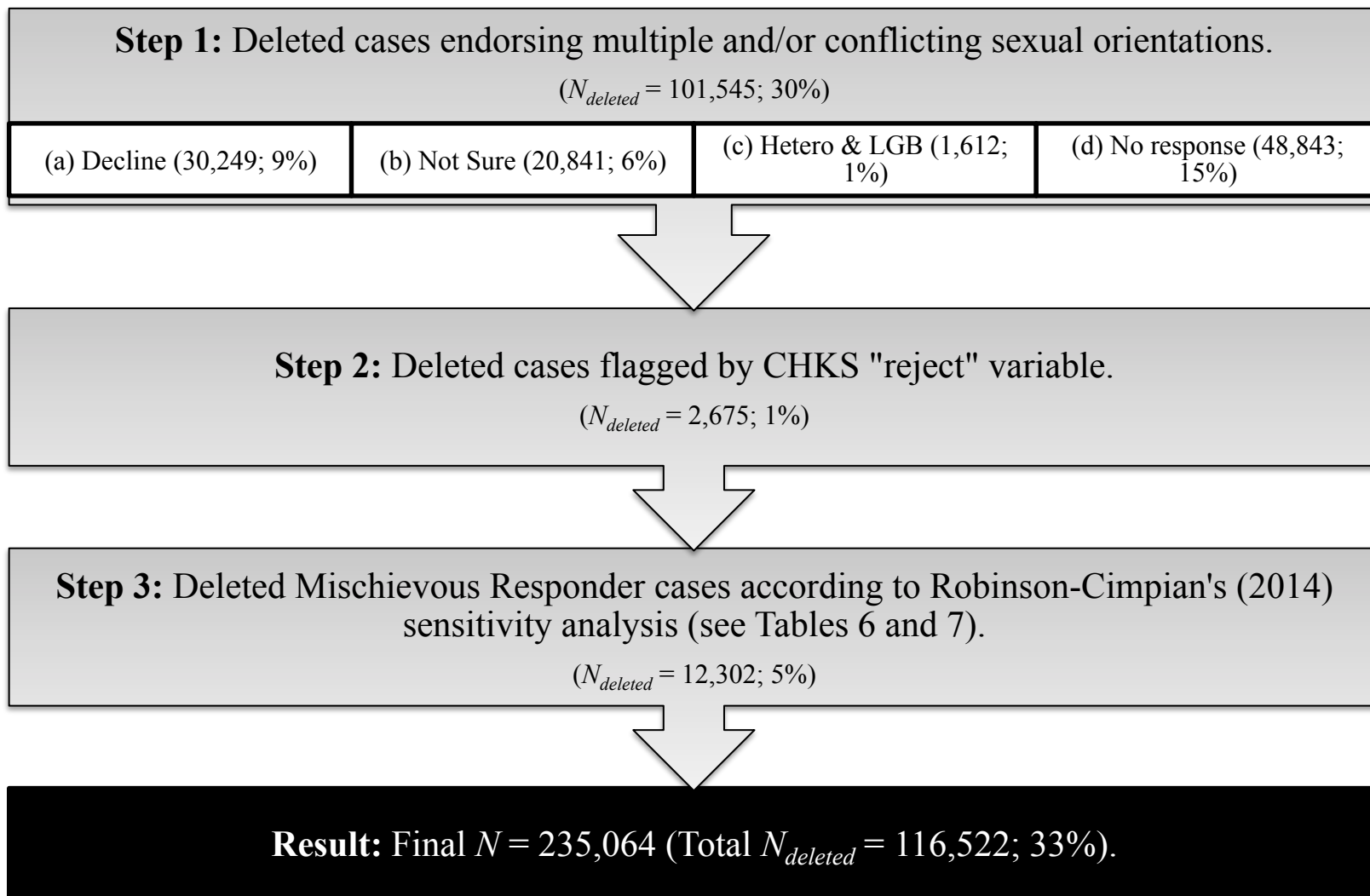


Figure 8. Flowchart of the data cleaning procedure utilized in this study.

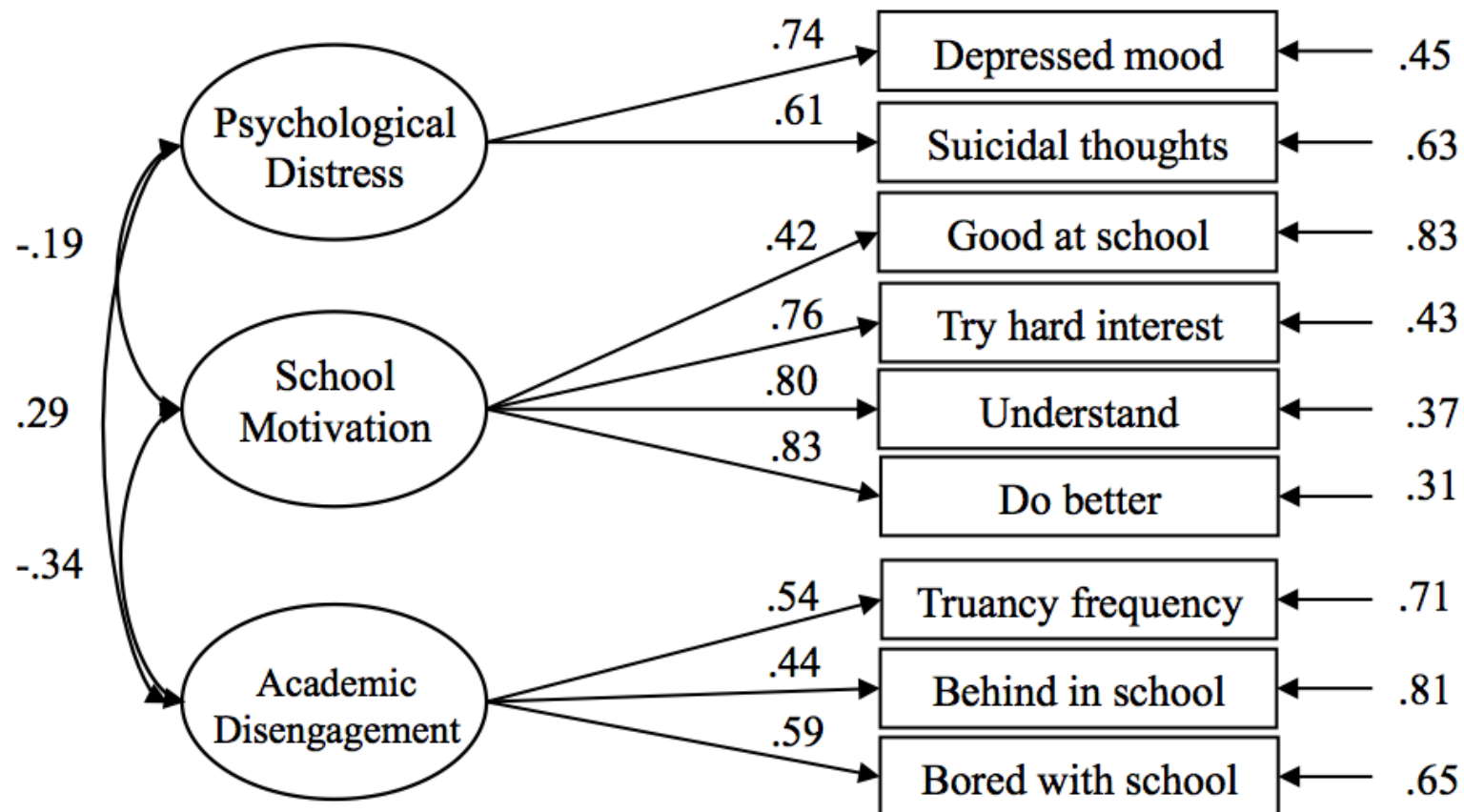


Figure 9. Standardized factor loadings, disturbances, and covariances for 3-Factor CFA (all estimates $p < .001$).

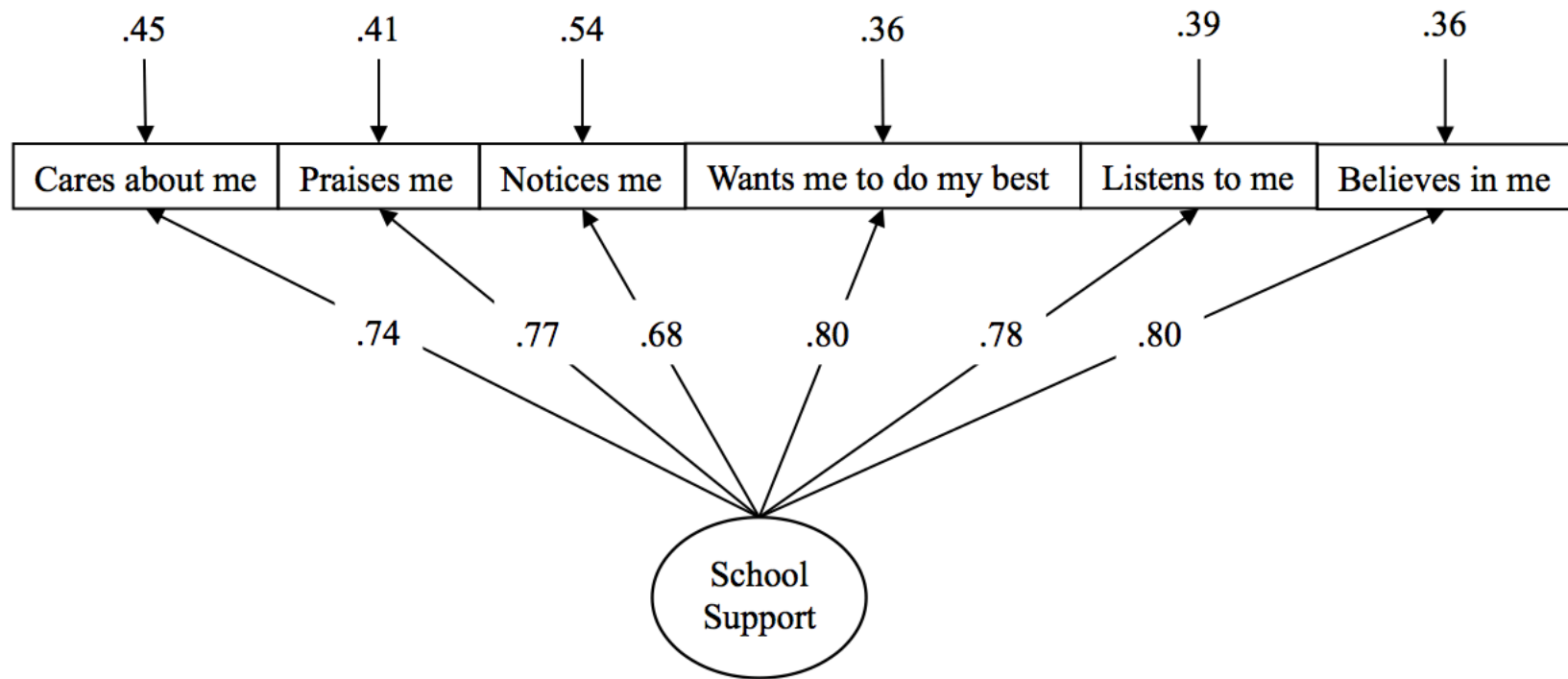


Figure 10. Standardized factor loadings and disturbances for the latent moderator CFA (all estimates $p < .001$).

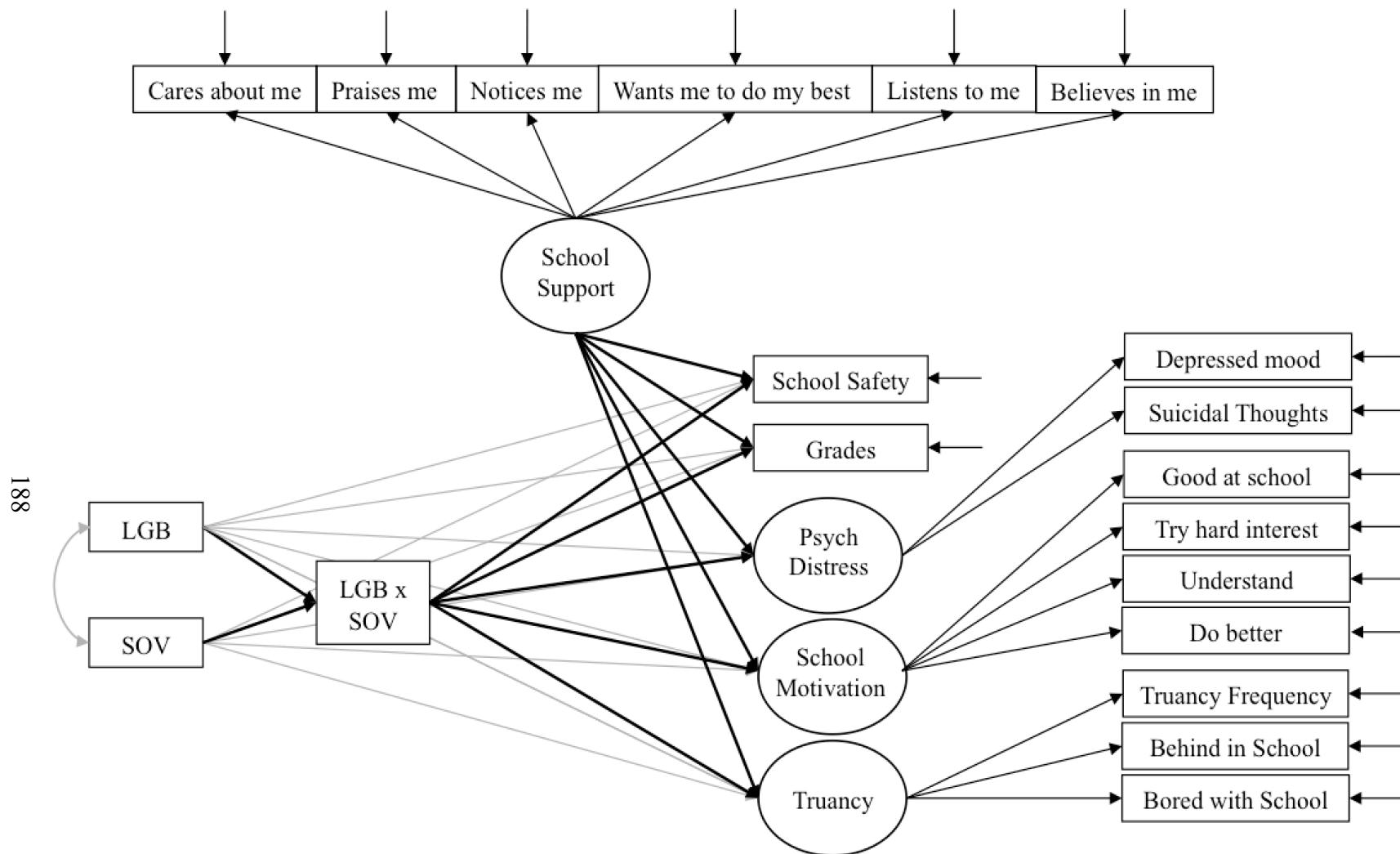


Figure 11. Model 0 without latent moderator interaction term; main effects of *School Support*, *Sexual Orientation*, and *SOV* predicting psychological and academic outcomes (all $p < .001$).

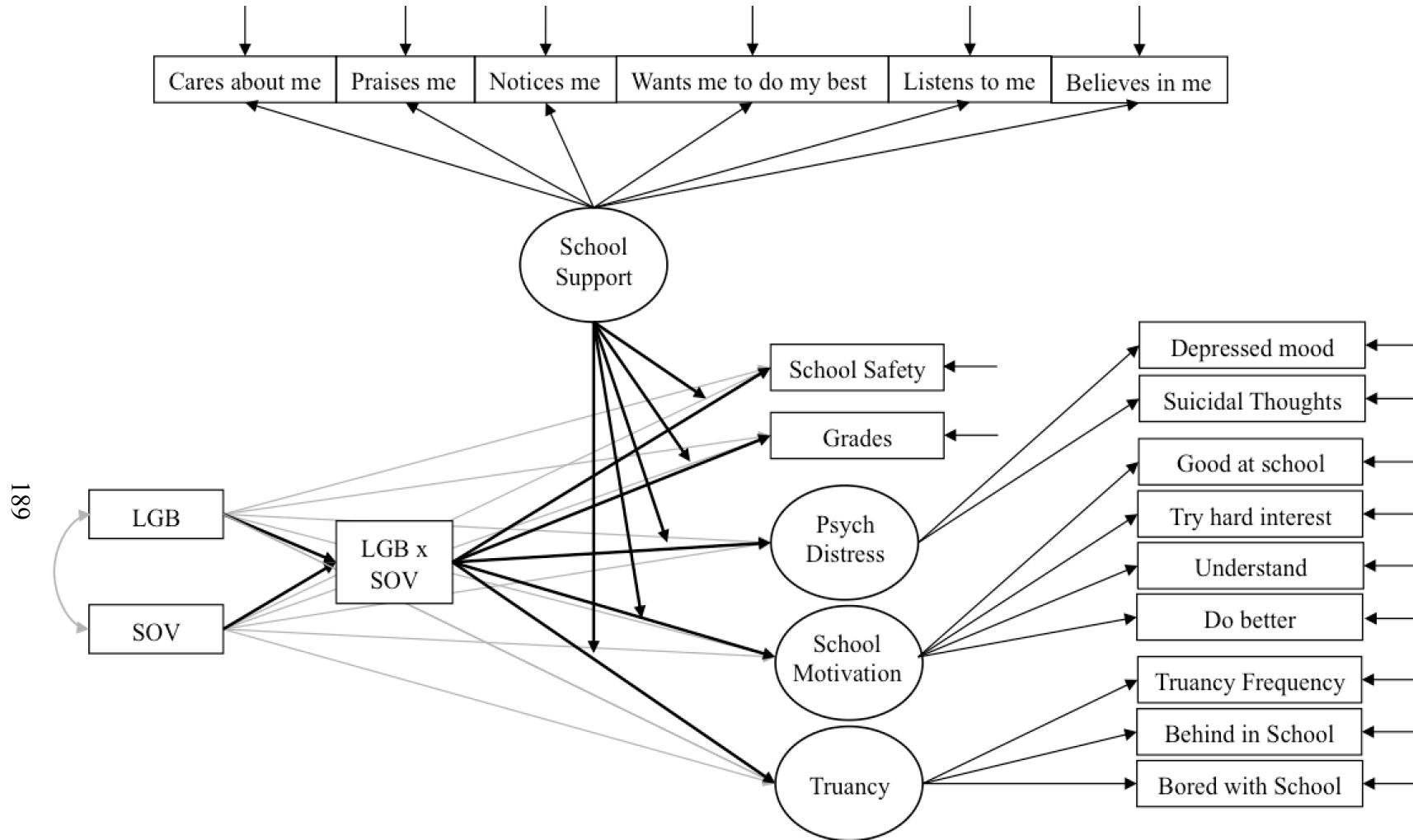


Figure 12. Full model 1 with standardized regression coefficients for moderation and direct effects, standardized factor loadings, and endogenous correlations (all $p < .001$).

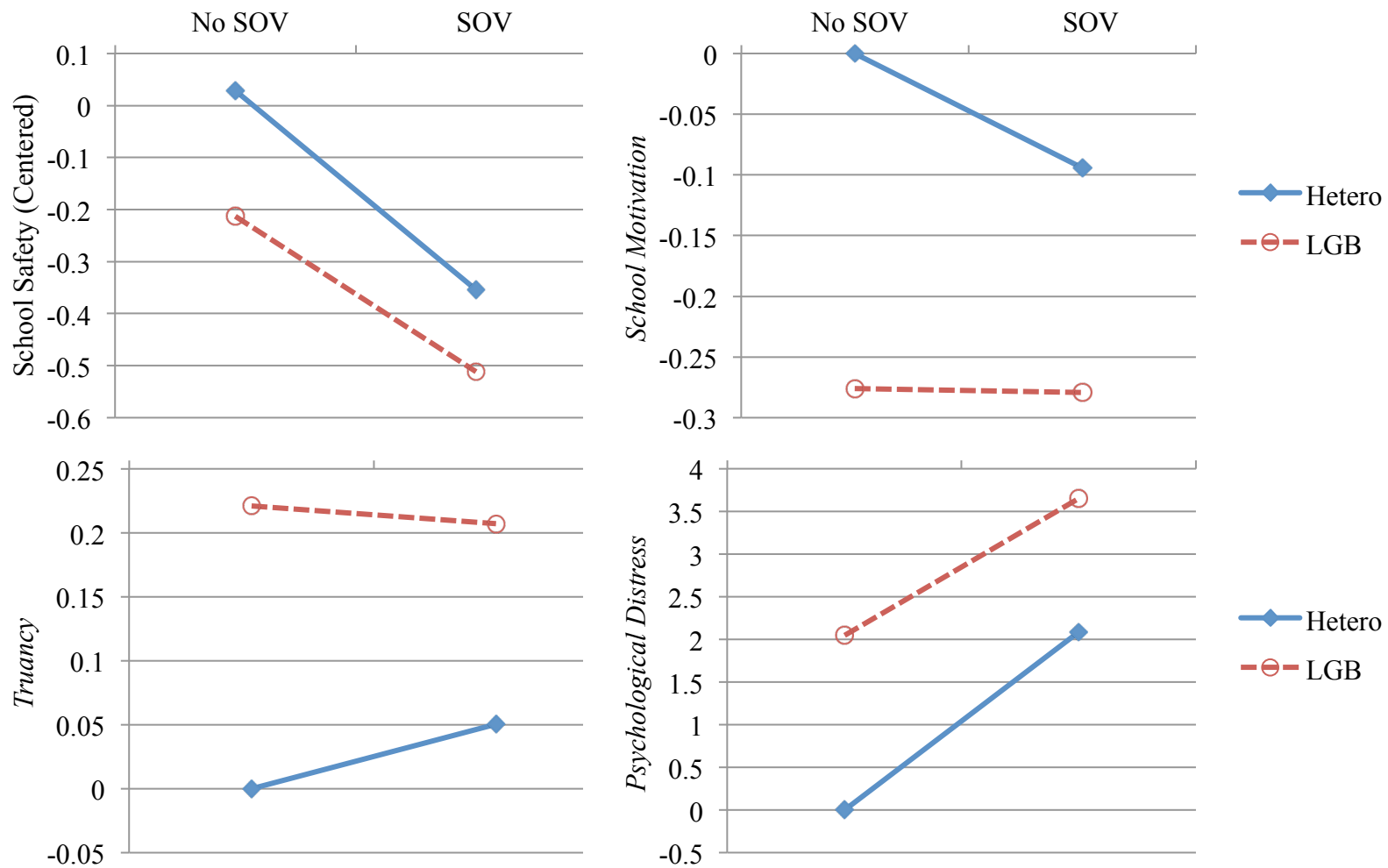


Figure 13. Simple slopes for interaction of LGB and SOV predicting school safety (centered), *School Motivation*, *Truancy*, and *Psychological Distress*

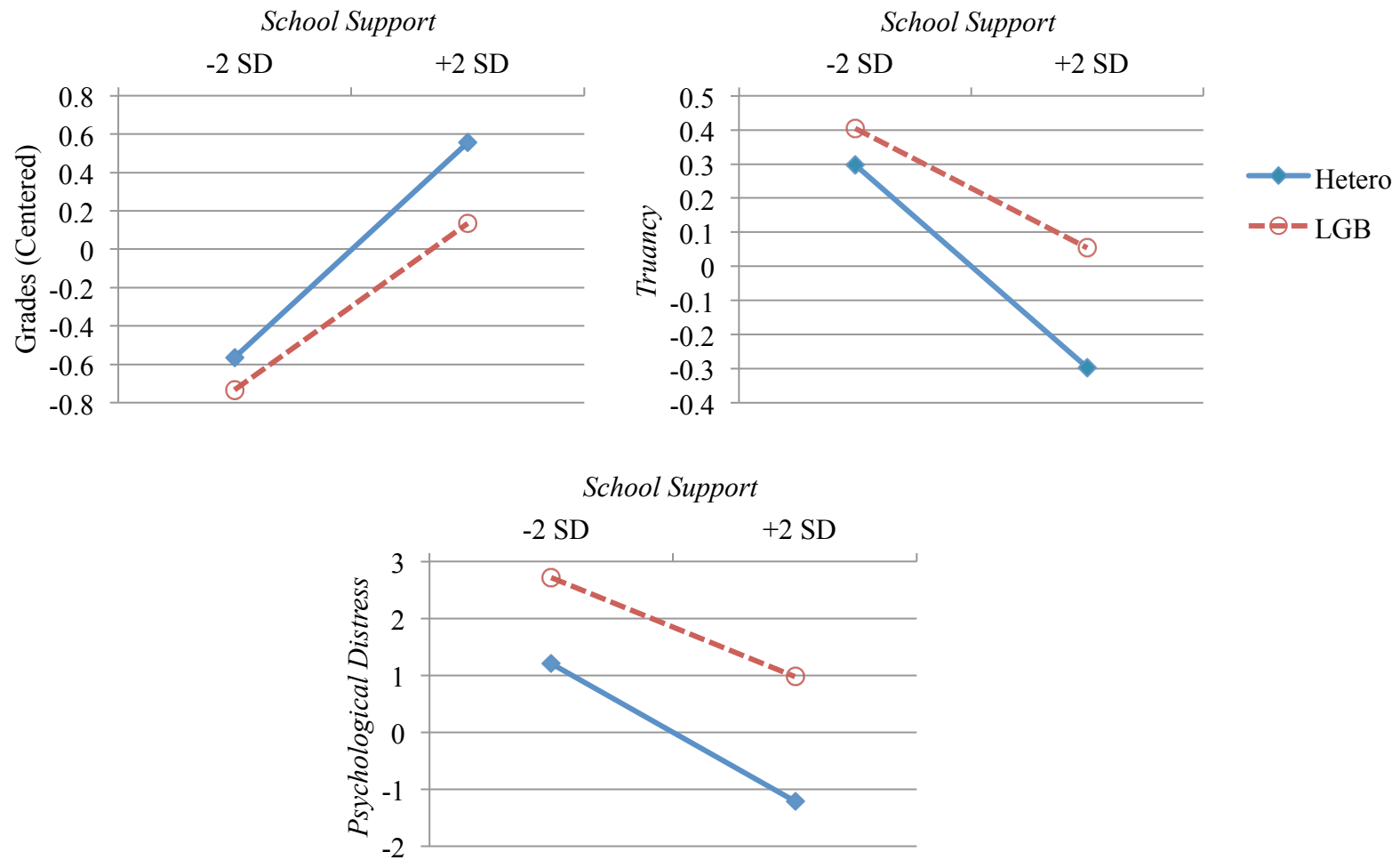


Figure 14. Simple slopes for interaction of LGB and *School Support* at ± 2 SD of *School Support* predicting grades (centered), *Truancy*, and *Psychological Distress*.

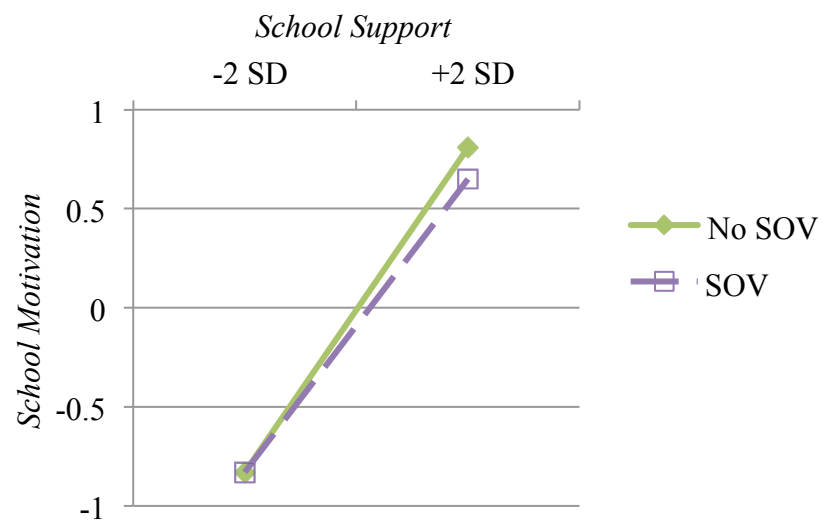


Figure 15. Simple slopes for interaction of SOV and *School Support* at +/- 2 SD of *School Support* predicting *School Motivation*.

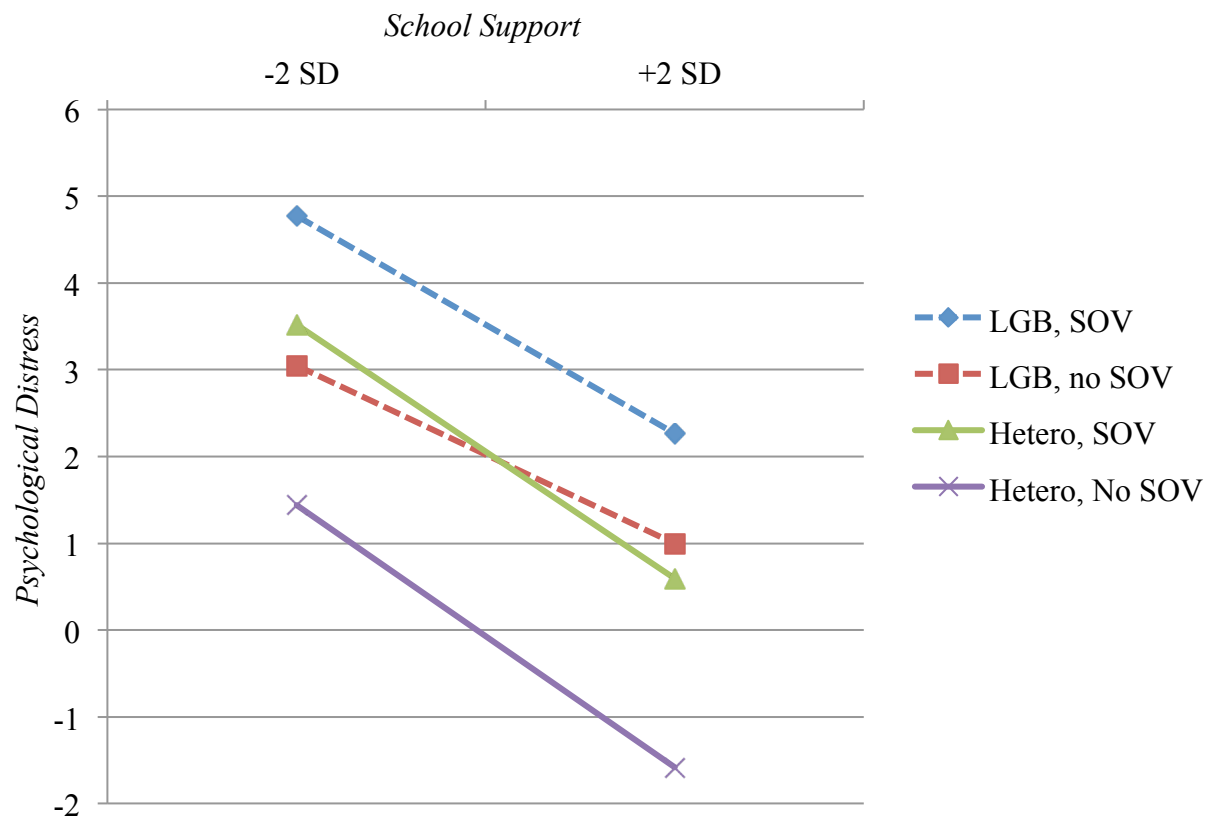


Figure 16. Simple slopes for three-way interaction of LGB, SOV, and *School Support* at +/- 2 SD of *School Support* predicting *Psychological Distress*.