Examining Health and Mental Health Disparities between Sexual Minority Youth and Heterosexual Youth in the United States

M.S.W. Thesis

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Abstract

Although various studies and systematic reviews have found an association between sexual orientation and health and mental health outcomes, few studies have examined a specific sample of adolescents aged 14 to 18 years of age that is generalizable to the entire United States population, while applying minority stress theory and general strain theory to a host of negative mental health outcomes and health risk behaviors in one study. The objective of this thesis is to examine a host of health and mental health outcomes among youth aged 14 to 18 years from a study generalizable to the entire United States population, while also applying minority stress theory and general strain theory, to find out whether sexual minority youth are at greater risk of experiencing poor health and mental health outcomes than their heterosexual peers. Controlling for age, sex, and race/ethnicity, this thesis examined a host of health and mental health outcomes among youth to find out whether sexual minority youth are at greater risk of experiencing poor health and mental health outcomes than their heterosexual peers. Data for this study came from the Centers for Disease Control and Prevention's 2017 Youth Risk Behavior Survey (YRBS). A sample of 14,547 youth aged 14-18 years (50.1% female) was analyzed using weighted binary logistic regression to determine the association between sexual orientation and 24 dependent variables in the following categories: school safety and violent behaviors, victimization, mental health, suicidal behaviors, substance use, obesity, and protective factors. Of the 14,547 youth examined, 85.4% self-identified as heterosexual, 2.4% as lesbian/gay, 7.9% as bisexual, and 4.2% as unsure. Controlling for age, sex, and race/ethnicity, youth who self-identified as sexual minority (lesbian/gay, bisexual or unsure) were significantly more likely to engage in violent behaviors, be victimized, report poor mental health, engage in suicidal behaviors, engage in substance use, and be obese (adjusted odds ratios ranged from 1.42 to 6.38) compared to youth

who self-identified as heterosexual. Youth who self-identified as sexual minority were significantly less likely to describe themselves as earning mostly A's or B's, played on a sports team, or were physically active (adjusted odds ratios ranged from 0.51 to 0.70) compared to youth who self-identified as heterosexual. The findings of this thesis extend past research on disparities of sexual minority youth and heterosexual youth in studies involving small samples or specific geographic locations that are not generalizable to the entire United States population, and this thesis uses these findings to explore implications for social work policy and practice.

Keywords: sexual minority youth, risk behaviors, mental health outcomes, substance use, violence and victimization, school safety, Youth Risk Behavior Survey

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Introduction

The last two decades have witnessed a proliferation of research focusing on health and mental health disparities between sexual minority and heterosexual youth. Sexual minority youth include youth who self-identify as lesbian, gay, bisexual, transgender, or questioning (LGBTQ) or those who self-report as having same-gender sexual behavior or attraction (Galupo et al., 2015; Hottes et al., 2016). Therefore, in this thesis, sexual minority youth are defined to include those youth who identify as LGBTQ and those who have same-sex attraction. Nationwide, Kann et al. (2016) found that about 11% of youth self-identified as sexual minority in 2015; 2% as lesbian or gay, 6% as bisexual, and 3% as not sure of their sexual identity. In 2017, this proportion rose slightly where almost 15% of youth self-identified as sexual minority; 2.4% as lesbian or gay, 8% as bisexual, and 4.2% as not sure of their sexual identity (Kann et al., 2018).

One reason for the increase of self-reported identification as sexual minority youth may be due to the availability of online social networking with increasing numbers of youth accessing websites for social support and communication with others with same interests (Ceglarek & Ward, 2016; Craig et al., 2015; Luk et al., 2019). Also, sexual minority youth are accessing websites for social communication and identity development at an increasing rate despite being at risk of being cyberbullied (Ceglarek & Ward, 2016; Craig et al., 2015). Furthermore, online social networking and sexual minority allies within schools have decreased the traditional stigma for sexual minority youth, which in the past has been driven by internalization and fear of victimization (Liao et al., 2015; Martin-Story, 2015). However, notwithstanding this, studies (Baams et al., 2015; Bruce et al., 2015; Button & Worthen, 2014; Chaudoir et al., 2017; Eitle & Eitle, 2016; Goldbach & Gibbs, 2015; Goldbach et al., 2015; Katz-Wise et al., 2015; Livingston et al., 2015; Snyder et al., 2016; Steele, 2016; Wilson et al., 2016) and systematic reviews

(Goldbach et al., 2014; Longobardi & Badenes-Ribera, 2017) over the last decade have demonstrated the negative effects of minority stress and general strains on the health and mental health outcomes of sexual minority youth. Although various studies (Burton et al., 2014; Hirsch et al., 2017; Puckett et al., 2017; Rodgers, 2017) and systematic reviews (Collier et al., 2013; Hall, 2018; Lucassen et al., 2017; Marshall et al., 2016; Miranda-Mendizábal et al., 2017; Ross et al., 2018) have shown that sexual minority youth are at increased risk of experiencing discrimination and negative health and mental health outcomes, few studies have examined a specific sample of adolescents aged 14 to 18 years of age that is generalizable to the entire United States population while applying minority stress theory and general strain theory to a host of negative mental health outcomes and health risk behaviors in one study. Moreover, other studies have relied upon using a small sample (Felner et al., 2020; Puckett et al., 2017; Youatt et al., 2015) or a sample from a specific geographical location (Day et al., 2017; Gamarel et al., 2018; Whitton et al., 2018); thereby, making it less generalizable to the entire United States population. Therefore, the objective of this thesis is to examine a host of health and mental health outcomes among youth aged 14 to 18 years from a study generalizable to the entire United States populatin, while also applying minority stress theory and general strain theory, to find out whether sexual minority youth are at greater risk of experiencing poor health and mental health outcomes than their heterosexual peers.

Overview of Master's Thesis

This thesis is organized into five main sections. In section one, I provide a general introduction and overview of the thesis. Section two focuses on the theories informing this thesis. Section two also consists of a comprehensive review of the existing literature on sexual minority youth health and mental health outcomes. In section three, I describe the methodology with

emphasis on the data, and how variables were measured. I also describe the type of analysis employed in the thesis. Section four focuses on the description of the thesis findings. Lastly, section five focuses on discussing the thesis findings in relation to the existing literature. I also discuss the implications of the thesis in relation to policy, research, and practice. Limitations and suggestions for future research are also discussed before offering concluding remarks.

Theoretical Framework

This thesis is informed by minority stress theory (Meyer, 2003) and general strain theory (Agnew, 1992). Minority stress theory posits that minority identity is linked to stress processes such as the expectation of rejection, concealment, or internalized stigma, which consequently creates a discriminatory and hostile social stress environment that leads to negative mental health outcomes (Meyer, 2003). Some researchers have found that specific sexual minority stressors such as self-stigma and discrimination have shaped mental health outcomes and negatively affected the coping behaviors of sexual minority youth, ultimately leading to negative determinants of health (Chaudoir et al., 2017; Goldbach & Gibbs, 2015). Researchers have also used minority stress theory to explain disparities in substance use and other mental health disorders such as depression and suicidality within sexual and gender minority youth populations (Baams et al., 2015; Bruce et al., 2015; Goldbach et al., 2014; Livingston et al., 2015).

General strain theory posits that delinquency is used to alleviate a strain or negative stimulus, and negative behaviors develop in adolescents due to anger and other suppressed emotions (Agnew, 1992). Using general strain theory, researchers have found sexual minority youth strains and stressors have led to negative behaviors such as substance use (Steele, 2016; Button, 2016), weapon carrying on school property (Button & Worthen, 2017), poor academic performance, suicidality (Button, 2016) experiences of homelessness, and involvement in the

justice system (Snyder et al., 2016) as a consequence of deviant or maladaptive coping strategy. A study by Steele (2016) using general strain theory found that those youth who reported physical victimization such as being hit, slapped, punched, beaten up, or attacked with a weapon also reported significantly higher use of alcohol and marijuana. This thesis employed general strain theory and minority stress theory to explain disparities between health and mental health outcomes between sexual minority youth and their heterosexual counterparts.

Literature Review

The literature reviewed in this section focuses on some of the common negative outcomes that youth experience. These include victimization (school bullying, cyberbullying, and sexual violence); school safety concern; mental health problems (feelings of sadness or being depressed, and suicidal behaviors); substance use (alcohol use, binge drinking, cigarette smoking, marijuana use, prescription pain medication misuse, and illicit drug use); risky health behaviors such as overweight or obesity, as well as academic performance and cognitive functioning.

Victimization

For this thesis, victimization includes various forms of peer victimization, such as school bullying or cyberbullying (Collier et al., 2013), sexual victimization, partner violence (Zavala, 2017), or any other form of verbal, physical, or emotional abuse (Anderson & Blosnich, 2013). Using Agnew's general strain theory, a study by Snyder et al. (2016) found that youth who identify as LGBTQ report strains of polyvictimization, discrimination, and violent victimization, which led to experiences of homelessness and involvement in the justice system. Researchers have found that compared to their heterosexual counterparts, sexual minority youth report more childhood physical, emotional, and sexual abuse (Anderson & Blosnich, 2013; Calzo et al.,

2014). Also in comparison to heterosexual youth, sexual minority youth are more likely to report sexual abuse from a caretaker, have been found to be at higher risk of getting kicked out of their home and experiencing homelessness, and have been identified as having increased risk of being sexually victimized while living on the streets (Johnson III, 2018; Tyler & Ray, 2019; Snyder et al., 2016). Furthermore, sexual minority youth experience more sexual and physical dating violence victimization (Rostad et al., 2019; Zavala, 2017; Zavala & Guadalupe-Diaz, 2018) and report more substance abuse due to peer victimization (Hatchel et al., 2019) than their heterosexual counterparts. A study by Rostad et al. (2019) found gay and bisexual male students experienced higher rates of teen dating violence victimization, and all sexual minority youth, regardless of sex, reported illicit drug use twice as likely compared to heterosexual counterparts. In addition, various studies have found that LGBTQ youth are at greater risk of experiencing stranger violence, family violence, school violence, and dating violence than heterosexual youth (Edwards & Sylaska, 2013; Goodenow et al., 2016; Rostad et al., 2020). Sexual minority youth who experience victimization are subsequently at increased risk of mental health problems, suicidality, poor academic performance, and substance use according to various studies (Button, 2016; Graham & Wood, 2019; Hatchel et al., 2019, Marx & Kettrey, 2016; Phillips II et al., 2017). One study performed by Button (2016) revealed 57% to 92% of LGBTQ youth report to have been either sexually, physically, or verbally victimized. Also, the relationship between substance use and victimization has been found to be higher for LGBTQ youth than heterosexual youth due to anti-gay harassment and homophobic teasing (Collier et al., 2013; Hatchel et al., 2019).

School safety

School safety is a major concern for sexual minority youth and many LGBTQ students miss school or avoid school activities due to the hostile environments, anti-LGBTQ language, and victimization experienced at school (Burton et al., 2014; Byrd & Hays, 2013; Kosciw et al., 2018; Kutsyuruba et al., 2015; Peter et al., 2016). A systematic review undertaken by Kutsyuruba et al. (2015) found that students in mainstream schools were at greater risk of feeling unsafe due to bullying and victimization or school violence. Youth have also engaged in weapon carrying on school property due to heightened fear of victimization (Baiden et al., 2019), with sexual minority youth at higher risk for weapon carrying due to general strain (Button & Worthen, 2017) and increased risk of peer victimization on school property (Kosciw et al., 2018). According to the 2017 survey conducted by Kosciw et al. (2018), 59.5% of LGBTQ students reported feeling unsafe at school because of their sexual orientation and 34.8% of LGBTQ students missed at least one entire day of school in the past month because they felt unsafe; another 10.5% missed four or more days in the past month.

School climate

Studies have revealed a link between suicidality and school climate among sexual minority youth and found sexual minority students are routinely exposed to verbal and physical insults and threats to their safety while at school (Kosciw et al., 2018; Kutsyuruba et al., 2015; Peter et al., 2016). Hence, sexual minority youth have reported numerous suicide attempts in the previous year and have been found more likely to be threatened at school when an adult is not available on school property (Byrd & Hayes, 2013; Willging et al., 2016). Sexual minority students have also been found to have a significantly higher risk of experiencing verbal harassment, name-calling, property damage, and being threatened on school property compared

to their heterosexual counterparts (Burton et al., 2014; Goodenow et al., 2016; Kopels & Paceley, 2012; Lowry et al., 2017). Prior research has found LGBTQ students to be at greater risk of reporting depressive symptoms due to verbally abusive language practices, unsafe spaces within school, and direct victimization on school property (Baams et al., 2015; Bruce et al., 2015; Peter et al., 2016; Ross et al., 2018).

School bullying

School bullying is a form of victimization on school property that researchers have found to be a pervasive public health issue concerning youth in the United States currently (Baiden & Tadeo, 2020), with sexual minority youth at increased risk of being bullied on school property compared to heterosexual youth (Goodenow et al., 2016; Kopels & Paceley, 2012; Reisner et al., 2015). Bullying refers to "a subtype of aggressive behavior, in which an individual, or a group of individuals, repeatedly attacks, humiliates, and/or excludes a relatively powerless person" (Salmivalli, 2010, p. 112). Olweus (1999) suggested three essential criteria in operationalizing bullying: 1) imbalance of power; 2) intentional harm doing; and 3) acts carried out repeatedly over time. Using minority stress theory, bullying has been identified as a stressor that leads to suicidal behaviors and substance use among sexual minority youth (Livingston et al., 2015; Reisner et al., 2015). Also, bullying victimization has specifically been found to be associated with suicidal ideation among youth (Baiden & Tadeo, 2020) with sexual minority youth at increased risk for bullying victimization compared to their heterosexual counterparts (Baams et al., 2015; Hatchel et al., 2019). Furthermore, sexual minority youth have been found to experience disproportionately higher rates of bullying and harassment both online and offline compared to cisgender youth (Abreu & Kenny, 2018; Reisner et al., 2015; Waller et al., 2018).

Cyberbullying

Cyberbullying is a version of online harassment and has been defined as the use of electronic communication to bully another person with intimidation or threatening messages (Waller et al., 2018). Some studies have found the percentage of LGBTQ youth experiencing cyberbullying to be as low as 10.5% and others as high as 71.3% within the last ten years, according to the systematic review conducted by Abreu and Kenney (2018). According to Waller et al. (2018), cyberbullies are likely to choose cyberbullying due to the distance from victims and lack of consequences. Researchers have also found that the strain of cyberbullying on sexual minority youth leads to deviant health risk behaviors such as drug use, alcohol use, and risky sexual behavior (Abreu & Kenney, 2018; Graham & Wood, 2019; Waller et al., 2018). Specifically, the study by Waller et al. (2018) linked cyberbullying of LGBTQ youth to poor relationships, substance use, and lack of an emotional, supportive bond with authoritative figures. Some studies have also found that cyberbullying of LGBTQ youth has led to many adverse psychological (suicidal ideation and attempt), emotional (depression and low self-esteem), and behavioral (aggression, isolation) effects, as well as poor academic performance (Graham & Wood, 2019; Reisner et al., 2015; Waller et al., 2018).

Sexual violence

In regards to sexual violence victimization, many LGBTQ youth experience rejection and discrimination, along with physical and sexual abuse shortly after they come out (Goodenow et al., 2016; McCormick et al., 2018; Reisner et al., 2015). Sexual minority youth have also been found to demonstrate a greater frequency of sexual risk-taking behaviors and encounter earlier sexual debut compared to heterosexual youth, putting them at increased risk of sexual victimization (Lowry et al., 2016; Poteat et al., 2019). Discrimination, marginalization, and

isolation of LGBTQ youth could result in greater vulnerability of negative sexual outcomes, such as forced sex and poor health outcomes such as the transmission of sexually transmitted diseases (Collier et al., 2013; Higa et al., 2014; Rodgers, 2017; Zavala, 2017). Also included in victimization is partner violence, which includes sexual, physical, and psychological violence; partner violence has been found prevalent among individuals involved in same-sex relationships (Edwards & Sylaska, 2013; Rostad et al., 2020; Zavala, 2017).

Depression and Suicidality

Sexual minority youth encounter increased rates of depressive symptoms and depressive disorder due to the dual stigma of having mental health issues and being identified as a marginalized group (Bruce et al., 2015; Lucassen et al., 2017). Sexual minority youth also report more challenges regarding depression compared to their heterosexual counterparts due to the association between sexual orientation and psychological distress (Bruce et al., 2015; Mustanski & Liu, 2013; Ross et al., 2018). Researchers have found that feelings of hopelessness and the presence of major depressive disorder symptoms have been linked with peer victimization among youth who self-identified as LGBTQ (Button, 2016; Mustanski & Liu, 2013). Consequently, the risk factors for depression among sexual minority youth are varied but researchers have found that they typically include school bullying victimization, community violence victimization, internalized LGBTQ-related oppression, parental rejection, abuse, and other traumatic events, stress from hiding and managing a socially stigmatized identity, maladaptive coping, negative interpersonal interactions, and negative religious experiences (Baams et al., 2015; Bruce et al., 2014; Hall, 2018; Marshall et al., 2016).

Suicidal behaviors

The process of coming out as an LGBTQ status in itself has been found to correlate with greater hopelessness leading to depressive symptoms and suicidal behavior strongly due to the loss of friends and psychological maltreatment from caregivers (Puckett et al.,2017). Therefore, LGBTQ youth have been found to also be at increased risk for suicidal behaviors and death by suicide (Hatchel et al., 2019; Hirsch et al., 2016; Puckett et al., 2017). The experiences of homophobic persecution, family rejection, and victimization, as well as coming out, have all been found to be stressors associated with suicidality among sexual minority individuals (Baams et al., 2015; Livingston et al., 2015). In their study regarding suicidal ideation and self-harm, Lui and Mutanski (2012) found that 37.4% of the sexual minority youth endorsed some incidence of suicidal ideation, and 15.4% reported non-suicidal self-injury (NSSI). Suicidal ideation, self-harm, and history of suicide attempt have all been found significantly greater among sexual minority youth compared to heterosexual youth (Baams et al., 2015; Di Giacomo et al., 2018; Hatchel et al., 2019; Hirsch et al., 2017; Hottes et al., 2016; Liu & Mutanski, 2012; Livingston et al., 2015; Puckett et al., 2017). Lui and Mutanski (2012) also found in their study that low social support, perspective sexual minority victimization, impulsivity, and a history of suicide attempts or NSSI are associated with increased risk of suicidal ideation among LGBTQ youth. Baams et al. (2015) applied minority stress theory to risk for depression and suicide in their study, and found that the reasons for higher levels of depression in LGBTQ youth that lead to suicidal ideation include feelings of thwarted belongingness, perceived burdensomeness, coming out stress, and sexual victimization. Puckett et al. (2017) specifically found in their study that LGBTQ youth who lost friends during their coming out were 29 times more likely to attempt suicide. Researchers have also found that sexual minority youth who experience internalized

stigma create underlying minority stress with adverse effects that lead to depression and suicidal ideation (Bruce et al., 2015). According to Spivey and Prinstein (2018), a suicide plan refers to "thinking about a specific method of ending one's life" (p. 708) and of the one-third of youth who create a suicide plan, 60% will go on and attempt suicide. A study by Willging et al. (2016) found that among lesbian, gay, and bisexual students in New Mexico high schools, 35.4% reported making a suicide plan, and 28.5% actually attempted suicide within the past year. Other studies have found that gender nonconformity is proven to have an association with elevated risk for creating a suicide plan (Spivey & Prinstein, 2018; Peter et al., 2016; Willging et al., 2016). Furthermore, researchers have found that suicidal ideation and depressive symptoms increase the chance of gender-nonconforming youth actually endorsing a suicide plan (Hirsch et al., 2017; Spivey & Prinstein, 2018).

Suicide attempts

Studies have identified sexual minority youth as a high-risk population for suicidal behavior, to include suicidal ideation and suicide attempts, with the strongest predictor of suicide attempt being a history of a prior suicide attempt. (Mustanski & Liu, 2013; Puckett et al., 2017; Reisner et al., 2014). Hatzenbuehler (2019) found that lesbian, gay, and bisexual youth are between two and seven times more likely to attempt suicide than heterosexual youth. Using data from the 2007 Massachusetts Youth Risk Behavior Study, Reisner et al. (2014) found that 80% of suicide attempts were reported by lesbian, gay, bisexual, and questioning youth. Other studies have found that suicide attempt was significantly associated with sexual orientation among youth, with transgender youth at a higher risk of suicidality and non-suicidal self-injury than their cisgender counterparts (Marshall et al., 2016; Miranda-Mendizábal et al., 2017).

Substance Use

Within Agnew's general strain theory, substance use is driven by stress or strain and the lack of positive coping skills (Button, 2016; Rukus et al., 2017; Snyder et al., 2016; Steele, 2016). According to Rukus et al. (2017), general strain theory may be more applicable to substance use within the LGBTQ community due to the numerous pressures of living within a heteronormative society. Furthermore, researchers have identified substance use as one avoidant coping skill utilized by LGBTQ youth during the identity development phase of their adolescence (Day et al., 2017; Felner et al., 2019; Gamarel et al., 2018; Steele, 2016; Whitton et al., 2018).

Tobacco

Sexual minority youth report higher cigarette smoking rates than heterosexual youth, and the major themes associated with the higher rates of cigarette smoking are sexuality-related stressors and cigarette smoking as an ingrained part of sexual minority culture (Felner et al., 2019; Youatt et al., 2015). Additionally, sexual minority females have been found to exhibit greater smoking behaviors among LGBTQ youth; and smoking disparities are greater in females within sexual minorities, with greater risk evident in early adolescence (Corliss et al., 2011; Youatt et al., 2015). Sexual minority groups have also been found to have a higher proportion of smokers who use electronic vapor products than heterosexual groups (Kann et al., 2016; Kidd et al., 2018; Nayak et al., 2017). A study conducted by Kann et al. (2016) found 54.5% of sexual minority students reported ever using an electronic vapor product compared to 44.2% of heterosexual students, and 67.8% of students nationwide who had same-sex sexual contact reported having ever used electronic vapor through vape pipes, e-cigarettes, e-cigars, vape pens, hookah pens, and e-hookahs.

Alcohol

Sexual minority youth have been categorized as an at-risk group when considering alcohol use and misuse during their adolescence, with alcohol use accelerating throughout their transition into adulthood (Fish et al., 2017; Newcomb et al., 2012; Whitton et al., 2018). Newcomb et al. (2012) found in their study that sexual minority youth report earlier initiation of alcohol use than heterosexual youth, as well as steeper drinking trajectories into early adulthood. In their longitudinal study, Wilson et al. (2016 found the drinking trajectories for sexual minority females escalated higher over time than for heterosexual females due to the impact of minority stress on alcohol consumption within this population. Discriminated groups such as sexual minority youth are at increased risk for binge drinking, and the Growing Up Today Study (GUTS) found sexual minority youth to have an elevated risk of binge drinking when compared to heterosexual youth, according to Phillips II et al. (2017). The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defined binge drinking as a pattern of drinking that brings the blood alcohol level (BAC) to 0.08 grams or above. Furthermore, a BAC level of 0.08 grams or more is usually reached by consuming at least five drinks in about two hours for males and four drinks in about two hours for females (NIAAA, 2004). Researchers have found that lesbian and bisexual females demonstrate elevated risk for high-intensity binge drinking compared to heterosexual females (Fish et al., 2019), and 11.2% of transgender and gender diverse youth reported binge drinking in a study conducted by Gower et al. (2018). Furthermore, the study conducted by Martin-Storey (2015) found male youth with unsure identities and bisexual male youth reported a higher likelihood of binge drinking; however, male youth with only male partners reported a lower likelihood of binge drinking.

Marijuana

Minority stress theory can appropriately be applied to understand marijuana use among LGBTQ youth due to internalized homophobia and community connectedness (Collier t al., 2013; Goldbach et al., 2014). Researchers have found that sexual minority youth report more willingness to use marijuana due to peer pressure than non-sexual minority youth (Gamarel et al., 2018). Steele (2016) used general strain theory in her study and found that physical victimization was the only social strain to have a direct positive effect on marijuana use within Hispanic and African-American populations. Bowers et al. (2015) found in their study that 39.9% of sexual minority youth reported using marijuana at least one day in the past 30 days. Various studies have linked parental drug use, trauma, physical abuse, sexual abuse, and trading sex to marijuana use among LGBTQ youth (Bouris et al., 2010; McCormick et al., 2018; Tyler & Ray, 2019).

Prescription drugs

Relative to heterosexual youth, researchers have found sexual minority youth are at elevated risk of misusing prescription drugs (Heck et al., 2015) and black sexual minority youth with significant life stressors were found to have higher odds of past-year prescription opioid use (Kidd et al., 2018). Experiences of bullying have also been linked to prescription drug misuse among youth (Baiden & Tadeo, 2019) and some studies suggest that sexual minority youth who experience discrimination, have been exposed to adverse childhood experiences, or have higher levels of mental health distress also share a particular risk that makes them more susceptible to substance use in the form of prescription drug misuse (Anderson & Blosnich, 2013; Kecojevic et al., 2019).

Illicit drugs

Researchers have found heightened risk for substance use among sexual minority youth, demonstrated by elevated levels of tobacco, alcohol, marijuana, and other illicit drug use within this population (Day et al., 2017; Felner et al., 2020; Gamarel et al., 2018; Kidd et al., 2018). Researchers have also found contributors to substance abuse among general sexual minority populations to be hostile school environments, adverse mental health outcomes, and school-based victimization (Konishi et al., 2013; Reisner et al., 2015; Rostad et al., 2020). Whitton et al. (2018) found in their study that lesbian and gay youth are less likely to use illicit drugs when they are romantically involved with a partner; however, bisexual youth are more likely to increase use of illicit drugs and marijuana when involved with a romantic partner.

Overweight/Obesity

Sexual minority youth and gender minority youth demonstrate a greater occurrence of overweight and obesity compared to cisgender counterparts (Calzo et al., 2017; Grammer et al., 2019) and the study conducted by Hadland et al. (2014) found that "one-third of sexual minority youth engage in hazardous weight control behaviors" (p. 296). Some studies have suggested that unhealthy eating behaviors due to sexual minority stressors such as internalizing symptoms are responsible for overweight and obesity among sexual minority youth (Calzo et al., 2017; Katz-Wise et al., 2015; Watson et al., 2017). However, sexual orientation disparities have also been found in sports involvement, physical activity, and obesity within adolescent populations (Calzo et al., 2014; Moreish & Poteat, 2015; Toomey & Russell, 2013). A systematic review of published studies conducted by Eliason et al. (2015) found lesbian youth to be identified as morbidly obese compared to heterosexual youth and bisexual female youth with the highest

prevalence of obesity found among bisexual female youth belonging to White, Latina, and African-American groups.

Academic Performance/Cognitive Functioning

Researchers have found that sexual minority youth experience poor academic performance and lower grade point averages than heterosexual youth due to anti-gay harassment, victimization, and discrimination (Button & Worthen, 2014; Collier et al., 2013; Marx & Kettrey, 2016; Toomey et al., 2017; Wolff & Himes, 2010). The study by Goldbach et al. (2014) found that increased risk of marijuana use among LGBTQ youth due to minority stress may lead to impaired learning, memory problems, and trouble with mental processing. Also, sexual minority youth have been found to experience psychological dysfunction from the formation of harmful core beliefs due to internalized stigma such as homophobia and exposure to negative attitudes toward same-sex sexual attraction and victimization (Collier et al., 2013; Hatchel et al., 2019; Lucassen et al., 2015). Specifically, the study conducted by Anderson and Blosnich, (2013) found that childhood physical and sexual assault are more prevalent in sexual minority youth, and lead to developmental problems in regions of the brain associated with learning, reasoning, and memory.

Current Thesis

Although various studies and systematic reviews have found an association between sexual orientation and health and mental health outcomes, few studies have examined a specific sample of adolescents aged 14 to 18 years of age that is generalizable to the entire United States population, while applying minority stress theory and general strain theory to a host of negative mental health outcomes and health risk behaviors in one study. Therefore, drawing on minority stress theory and general strain theory, the objective of this thesis was to examine a host of health

and mental health outcomes among youth aged 14 to 18 years and to find out whether sexual minority youth are at greater risk of experiencing poor health and mental health outcomes than their heterosexual peers.

Methods

Data source and participants

This thesis used data from the 2017 Youth Risk Behavior Survey (YRBS). The YRBS is a cross-sectional school-based national survey that is conducted by the CDC every two years to examine health-risk behaviors that contribute to the leading causes of death and disability among youth in the US. The YRBS recruited 9th to 12th graders from both public and private schools to complete self-administered surveys. The YRBS utilized a three-stage cluster sample design to create a nationally representative sample of high school students. Detailed information about the YRBS, including the objectives, methodology, and sampling procedure has been described in previous studies and reports (Brener et al., 2013; Kann et al., 2018). The study protocol for conducting the YRBS was approved by the CDC's Institutional Review Board (IRB) and is publicly available. The YRBS data were de-identified (Brener et al., 2013); hence, no additional IRB approval was required. There were 14,765 respondents in the 2017 YRBS; however, the analysis to be presented in this thesis focused on youth aged 14 to 18 years old, given that less than 2% of the sample is between ages 12 and 13 years, resulting in a sample size of 14,547.

Measurement of variables

Outcome variables

Outcome variables examined in this thesis included the following: school bullying victimization, cyberbullying victimization, sexual violence victimization, symptoms of depression, symptoms of depression, suicidal ideation, suicide plan, suicide attempt, being

threatened on school property, being absent from school due to safety concerns, cigarette smoking, use of electronic vaping products, use of alcohol, binge drinking, use of marijuana, misuse of prescription pain medicine, use of illicit drugs, and overweight or obese. Detailed information about how each outcome variable was measured is provided in Table 1.

Table 1

List of variables

Variable name	Question	Coding scheme
Felt unsafe going to school	During the past 30 days, on how many days did you not go to school because you felt you would be unsafe at school or on your way to or from school?	0 days vs. 1 or more days
Threatened on school property	During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?	0 times vs. 1 or more times
Weapon carrying on school property	During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?	0 days vs. 1 or more days
Carried gun	During the past 12 months, on how many days did you carry a gun? (Do not count the days when you carried a gun only for hunting or for a sport, such as target shooting.)	0 days vs. 1 or more days
School bullying	During the past 12 months, have you ever been bullied on school property?	No vs. Yes
Cyberbullying	During the past 12 months, have you ever been electronically bullied? (Count being bullied through texting, Instagram, Facebook, or other social media.)	No vs. Yes
Sexual violence	During the past 12 months, how many times did anyone force you to do sexual things that you did not want to do? (Count such things as kissing, touching, or being physically forced to have sexual intercourse.)	0 times vs. 1 or more times
Teen dating violence	During the past 12 months, how many times did someone you were dating or going out with physically hurt you on purpose? (Count such things as being hit, slammed into something, or injured with an object or weapon.)	0 times/not dating vs. 1 or more times
Cognitive difficulties	Because of a physical, mental, or emotional problem, do you have serious difficulty concentrating, remembering, or making decisions?	No vs. Yes
Felt sad or depressed	During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?	No vs. Yes
Suicidal ideation	During the past 12 months, did you ever seriously consider attempting suicide?	No vs. Yes
Suicide plan	During the past 12 months, did you make a plan about how you would attempt suicide?	No vs. Yes
Suicide attempt	During the past 12 months, how many times did you actually attempt suicide?	times vs. 1 or more times

Current cigarette smoking	During the past 30 days, on how many days did you smoke cigarettes?	days vs. 1 or more days
Current use of electronic vapor products	During the past 30 days, on how many days did you use an electronic vapor product?	days vs. 1 or more days
Current alcohol use	During the past 30 days, on how many days did you have at least one drink of alcohol?	days vs. 1 or more days
Current binge drinking	During the past 30 days, on how many days did you have 4 or more drinks of alcohol in a row (if you are female) or 5 or more drinks of alcohol in a row (if you are male)?	days vs. 1 or more days
Current marijuana use	During the past 30 days, how many times did you use marijuana?	days vs. 1 or more days
Ever misused prescription pain medication	During your life, how many times have you taken prescription pain medicine without a doctor's prescription or differently than how a doctor told you to use it? (Count drugs such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet.)	days vs. 1 or more days
Ever used illicit drugs	Use of cocaine (powder, crack, or freebase); inhalants (glue, aerosol spray cans, paints); heroin (smack, junk, or China White); methamphetamines (speed, crystal, crank, or ice); ecstasy (MDMA); hallucinogenic drugs (LSD, acid, PCP, angel dust, mescaline, or mushrooms); synthetic marijuana (K2, Spice, fake weed, King Kong, Yucatan Fire, Skunk, or Moon Rocks); and, steroid pills	No vs. Yes
Obese	BMI calculated with responses to 2 questions: how tall are you without your shoes on? How much do you weigh without your shoes on?	No vs. Yes
Academic performance	During the past 12 months, how would you describe your grades in school?	Mostly D's, F's, or C's vs. Mostly A's, or B's
Played on a sports team	During the past 12 months, on how many sports teams did you play? (Count any teams run by your school or community groups.)	No vs. Yes
Physically active	During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spent in any kind of physical activity that increased your heart rate and made you breathe hard some of the time.)	Inactive vs. Active

Explanatory variable

The main explanatory variable in this thesis is sexual orientation and was coded into "0 = heterosexual", "1 = lesbian/gay", "2 = Bisexual", and "3 = questioning". Sexual orientation was measured using sexual identity and sex of sexual contact. Sexual orientation defined by sexual identity included adolescents who self-identified as gay, lesbian, or bisexual and those who were

not sure about their sexual identity. Sexual orientation defined by sex of sexual contacts included adolescents who had sexual contact with only the same sex or with both sexes.

Demographic variables

The following demographic factors were included in the thesis as control variables: age, sex, and race/ethnicity. Age was measured in years, whereas sex was coded as "0 = male" and "1 = female". Race/ethnicity was coded into the following categories "0 = non-Hispanic White", "1 = Black/African American", "2 = Hispanic", "3 = Other".

Data analyses

Data were analyzed using descriptive and multivariable analytic techniques. The general distribution of all the variables included in the analysis was first examined using percentages. This was followed by using binary logistic regression to examine the association between sexual orientation and outcome variables while controlling for age, sex, and race/ethnicity. All analyses were performed using Stata version 14. Adjusted odds ratios (AOR) were reported together with their 95% Confidence Intervals (C.I.). Variables were be considered significant if the *p*-value was less than .05. To account for the weighting and complexity of the sampling design employed by the YRBS, Stata's "svy" command was used.

Results

Sample characteristics by sex

Table 2 shows the general distribution of the study variables by sex. Of the 14,547 adolescents in the 2017 YRBS, 85.4% reported their sexual orientation as heterosexual, 2.4% as gay or lesbian, 7.9% as bisexual, and 4.2% as not sure. A little over half of the adolescents (51.5%) were females. The proportion of females that self-identified as bisexual (12.8%) was slightly greater than the proportion of males that self-identified as bisexual (2.8%). Compared to

females, a higher proportion of adolescent males reported school safety concerns such as being threatened on school property (7.5% versus 4.0%), carrying a weapon on school property (5.4% versus 1.8%), and carrying a gun (7.6% versus 1.8%). However, a higher proportion of females compared to males were victims of school bullying (22.3% versus 15.5%), victims of cyberbullying (19.7% versus 9.8%), experienced teen dating violence (6.3% versus 4.5%), or experienced sexual violence (15.1% versus 4.3%). Similarly, a higher proportion of females compared to males reported mental health problems and suicidal behaviors. With the exception of current use of electronic vapor products, substance use factors were similar among adolescent males and females. About 18% of adolescent males compared to 12.3% of adolescent females were obese. About 80% of adolescent females compared to 69.3% of adolescent males described their grades as mostly A's or B's. The proportion of adolescent males that played in a sports team (59.5%) or were physically active (56.9%) was greater than the proportion of adolescent females that played on a sports team (49.4%) or were physically active (36.7%).

Table 2

Sample characteristics by sex (n = 14,547)

List of variables	Total	Sex	
Demographic factors	Frequency (Weighted %)	Male 7,058 (48.5%) Weighted %	Female 7,489 (51.5%) Weighted %
Age			
14 years	1,910 (13.2)	10.8	12.6
15 years	3,569 (24.5)	25.1	25.0
16 years	3,680 (25.3)	25.2	25.9
17 years	3,599 (24.7)	24.6	24.0
18 years	1,789 (12.3)	14.3	12.5
Race/ethnicity			
Non-Hispanic White	6,315 (43.4)	52.5	54.3
Black/African-American	2,832 (19.5)	13.6	13.4
Hispanic	3,661 (25.1)	23.8	21.8
Other race/ethnicity	1,739 (12.0)	10.1	10.5
Sexual orientation			
Heterosexual	12,429 (85.4)	91.6	79.9
Lesbian/gay	354 (2.4)	2.3	2.3
Bisexual	1,152 (7.9)	2.8	12.8

Not sure	612 (4.2)	3.3	5.0
Safety concern factors			
Felt unsafe going to school			
No	13,508 (92.9)	94.0	92.9
Yes	1,039 (7.1)	6.0	7.1
Threatened on school property			
No	13,667 (94.0)	92.5	96.0
Yes	880 (6.0)	7.5	4.0
Weapon carrying on school property			
No	13,973 (96.0)	94.6	98.2
Yes	574 (4.0)	5.4	1.8
Carried gun			
No	13,835 (95.1)	92.4	98.2
Yes	712 (4.9)	7.6	1.8
Victimization			
Victim of school bullying			
No	11,915 (81.9)	84.5	77.7
Yes	2,632 (18.1)	15.5	22.3
Victim of cyberbullying			
No	12,453 (85.6)	90.2	80.3
Yes	2,094 (14.4)	9.8	19.7
Teen dating violence			
No	13,685 (94.1)	95.5	93.7
Yes	862 (5.9)	4.5	6.3
Victim of sexual violence			
No	13,058 (89.8)	95.7	84.9
Yes	1,489 (10.2)	4.3	15.1
Mental health factors			
Cognitive difficulties			
No	9,889 (68.0)	74.7	61.9
Yes	4,658 (32.0)	25.3	38.1
Symptoms of depression			
No	9,933 (68.3)	78.6	58.9
Yes	4,614 (31.7)	21.4	41.1
Suicidal behaviors			
Suicidal ideation			
No	12,002 (82.5)	88.0	77.9
Yes	2,545 (17.5)	12.0	22.1
Suicide plan			
No	12,533 (86.2)	90.2	82.9
Yes	2,014 (13.8)	9.8	17.1
Suicide attempt			
No	13,401 (92.1)	94.9	90.7
Yes	1,146 (7.9)	5.1	9.3
Substance use factors			
Current cigarette smoking			
No	13,318 (91.5)	90.1	92.1
Yes	1,229 (8.5)	9.9	7.9
Current use of electronic vapor products			
No	12,590 (86.5)	83.7	88.7
Yes	1,957 (13.5)	16.3	11.3

Current alcohol use			
No	10,298 (70.8)	72.3	68.3
Yes	4,249 (29.2)	27.7	31.7
Binge drinking			
No	12,451 (85.6)	85.8	84.1
Yes	2,096 (14.4)	14.2	15.9
Current marijuana use			
No	11,616 (79.8)	80.0	80.2
Yes	2,931 (20.2)	20.0	19.8
Ever misused prescription pain medication			
No	12,519 (86.1)	86.8	85.6
Yes	2,028 (13.9)	13.2	14.4
Ever used illicit drugs			
No	14,312 (98.4)	98.1	99.2
Yes	235 (1.6)	1.9	0.8
Other concerns			
Obese			
No	12,388 (85.2)	82.4	87.7
Yes	2,159 (14.8)	17.6	12.3
Protective factors			
Academic performance			
Neither mostly A's nor B's	3,814 (26.2)	30.7	20.4
Mostly A's or B's	10,733 (73.8)	69.3	79.6
Played on a sports team			
No	6,600 (45.4)	40.5	50.6
Yes	7,947 (54.6)	59.5	49.4
Physical activity			
Physically inactive	8,146 (56.0)	43.1	63.3
Physically active	6,401 (44.0)	56.9	36.7

Unadjusted and adjusted results

Table 3 shows results of the association between sexual orientation and adolescent health risk behaviors. Model 1 shows the unadjusted results of the association between sexual orientation and adolescent health risk behaviors. In Model 2, I adjusted for the effects of age, sex, and race/ethnicity. On the whole, there were slight changes in the magnitude of the results in Model 1 to Model 2. Controlling for age, sex, and race/ethnicity in Model 2, adolescents who self-identified as bisexual (AOR = 1.58, $p < .01$, 95% C.I. = 1.15-2.16) or not sure (AOR = 1.63, $p < .05$, 95% C.I. = 1.10-2.39) were more likely to report feeling unsafe going to school when compared to adolescents who self-identified as heterosexual. Compared to adolescents who self-

identified as heterosexual, odds were 2.4 times higher for adolescents who self-identified as bisexual (AOR = 2.40, $p < .001$, 95% C.I. = 1.70-3.37) and 2.16 times higher for adolescents who self-identified as not sure (AOR = 2.16, $p < .01$, 95% C.I. = 1.43-3.26) to report being threatened on school property. Adolescents who self-identified as bisexual had 2.8 times higher odds of carrying a weapon on school property when compared to their heterosexual counterparts (AOR = 2.80, $p < .001$, 95% C.I. = 1.83-4.27). Adolescents were more likely to be victims of school bullying, victims of cyberbullying, experienced teen dating violence or sexual violence if they self-identified as lesbian/gay, bisexual, or not sure. Controlling for age, sex, and race/ethnicity, adolescents who self-identified as lesbian/gay, bisexual, or not sure were more likely to report cognitive difficulties, experienced symptoms of depression, experienced suicidal ideation, made a suicide plan, or made a suicide attempt when compared to adolescents who self-identified as heterosexual. Consistently, adolescents who self-identified as bisexual had higher odds of currently smoking cigarette (AOR = 2.64, $p < .001$, 95% C.I. = 2.06-3.38), currently using electronic vapor products (AOR = 1.76, $p < .001$, 95% C.I. = 1.34-2.31), currently using alcohol (AOR = 1.46, $p < .01$, 95% C.I. = 1.19-1.79), binge drinking (AOR = 1.44, $p < .01$, 95% C.I. = 1.14-1.83), currently using marijuana (AOR = 1.99, $p < .001$, 95% C.I. = 1.58-2.50), ever misusing prescription pain medication (AOR = 2.25, $p < .001$, 95% C.I. = 1.77-2.87), or ever using illicit drugs (AOR = 4.90, $p < .001$, 95% C.I. = 2.61-9.91) when compared to their counterparts who self-identified as heterosexual. Adolescents who self-identified as bisexual had 1.86 times higher odds of being obese when compared to adolescents who self-identified as heterosexual (AOR = 1.86, $p < .001$, 95% C.I. = 1.41-2.47). With respect to protective factors, adolescents who self-identified as bisexual (AOR = 0.51, $p < .001$, 95% C.I. = 0.42-0.61) or not sure (AOR = 0.70, $p < .05$, 95% C.I. = 0.54-0.92) had lower odds of describing their grades as

mostly A's or B's. Similarly, compared to adolescents who self-identified as heterosexual, adolescents who self-identified as lesbian/gay, bisexual, or not sure were less likely to play on a sports team or engage in physical activity.

Table 3

Unadjusted and adjusted logistic regression results (n= 14,547)

Behavior	Unadjusted OR (95% C.I.)	*p* value	Adjusted[a] AOR (95% C.I.)	*p* value
Felt unsafe going to school				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.56 (1.04-2.34)	.032	1.51 (1.00-2.29)	.050
Bisexual	1.65 (1.23-2.21)	.001	1.58 (1.15-2.16)	.006
Not sure	1.65 (1.14-2.40)	.010	1.63 (1.10-2.39)	.016
Threatened on school property				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.59 (0.94-2.69)	.081	1.61 (0.93-2.79)	.085
Bisexual	1.79 (1.31-2.44)	.001	2.40 (1.70-3.37)	< .001
Not sure	1.94 (1.28-2.95)	.003	2.16 (1.43-3.26)	.001
Weapon carrying on school property				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.85 (0.90-3.77)	.089	1.91 (0.94-3.92)	.074
Bisexual	1.69 (1.10-2.58)	.018	2.80 (1.83-4.27)	< .001
Not sure	1.13 (0.68-1.89)	.629	1.36 (0.80-2.33)	.243
Carried gun				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	0.99 (0.47-2.10)	.976	0.99 (0.46-2.14)	.980
Bisexual	0.75 (0.44-1.25)	.256	1.33 (0.79-2.25)	.278
Not sure	1.38 (0.87-2.18)	.162	1.70 (1.08-2.70)	.025
Victim of school bullying				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.94 (1.37-2.74)	.001	2.08 (1.46-2.97)	< .001
Bisexual	2.49 (1.91-3.24)	< .001	2.29 (1.78-2.94)	< .001
Not sure	1.50 (1.11-2.04)	.010	1.42 (1.04-1.94)	.031
Victim of cyberbullying				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.51 (1.08-2.11)	.017	1.57 (1.12-2.21)	.011
Bisexual	2.70 (2.09-3.51)	< .001	2.23 (1.73-2.87)	< .001
Not sure	1.76 (1.23-2.52)	.003	1.61 (1.11-2.32)	.013
Teen dating violence				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	3.10 (1.90-5.05)	< .001	2.91 (1.80-4.70)	< .001
Bisexual	2.89 (2.21-3.80)	< .001	2.65 (1.99-3.53)	< .001
Not sure	1.59 (1.02-2.49)	.043	1.55 (1.00-2.42)	.051
Victim of sexual violence				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.99 (1.31-3.04)	.002	2.00 (1.24-3.22)	.006
Bisexual	3.53 (2.70-4.62)	< .001	2.56 (1.95-3.35)	< .001

Not sure	2.10 (1.54-2.87)	< .001	1.85 (1.35-2.54)	< .001
Cognitive difficulties				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	2.70 (1.88-3.88)	< .001	2.71 (1.89-3.88)	< .001
Bisexual	4.25 (3.50-5.16)	< .001	3.71 (3.06-4.49)	< .001
Not sure	2.37 (1.87-3.02)	< .001	2.27 (1.77-2.91)	< .001
Symptoms of depression				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	3.10 (2.21-4.36)	< .001	3.19 (2.23-4.55)	< .001
Bisexual	4.99 (4.22-5.90)	< .001	4.00 (3.42-4.68)	< .001
Not sure	2.18 (1.65-2.88)	< .001	2.02 (1.49-2.74)	< .001
Suicidal ideation				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	4.59 (3.23-6.51)	< .001	4.72 (3.27-6.82)	< .001
Bisexual	6.40 (5.26-7.79)	< .001	5.57 (4.65-6.66)	< .001
Not sure	2.96 (2.22-3.94)	< .001	2.82 (2.10-3.79)	< .001
Suicide plan				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	4.32 (3.21-5.82)	< .001	4.35 (3.19-5.94)	< .001
Bisexual	5.67 (4.53-7.11)	< .001	5.02 (3.96-6.36)	< .001
Not sure	2.84 (2.03-3.98)	< .001	2.73 (1.92-3.89)	< .001
Suicide attempt				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	3.57 (2.26-5.65)	< .001	3.49 (2.22-5.49)	< .001
Bisexual	5.26 (3.99-6.94)	< .001	4.56 (3.42-6.09)	< .001
Not sure	2.50 (1.76-3.54)	< .001	2.36 (1.64-3.39)	< .001
Current cigarette smoking				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	2.30 (1.54-3.44)	< .001	2.46 (1.67-3.61)	< .001
Bisexual	2.16 (1.68-2.78)	< .001	2.64 (2.06-3.38)	< .001
Not sure	1.21 (0.78-1.87)	.388	1.35 (0.87-2.07)	.164
Current use of electronic vapor products				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.33 (0.82-2.15)	.235	1.38 (0.85-2.24)	.179
Bisexual	1.43 (1.07-1.90)	.017	1.76 (1.34-2.31)	< .001
Not sure	0.72 (0.45-1.14)	.155	0.79 (0.50-1.25)	.302
Current alcohol use				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.33 (0.93-1.90)	.118	1.33 (0.93-1.90)	.108
Bisexual	1.48 (1.21-1.80)	< .001	1.46 (1.19-1.79)	.001
Not sure	0.65 (0.48-0.89)	.008	0.65 (0.48-0.90)	.010
Binge drinking				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.20 (0.73-1.97)	.468	1.23 (0.74-2.07)	.413
Bisexual	1.41 (1.13-1.75)	.003	1.44 (1.14-1.83)	.004
Not sure	0.74 (0.50-1.09)	.118	0.76 (0.82-1.12)	.156
Current marijuana use				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.90 (1.35-2.69)	.001	1.81 (1.29-2.53)	.001
Bisexual	1.90 (1.53-2.35)	< .001	1.99 (1.58-2.50)	< .001
Not sure	0.96 (0.69-1.35)	.827	0.99 (0.70-1.41)	.962

Ever misused prescription pain medication				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	2.01 (1.33-3.02)	.002	2.00 (1.35-2.98)	.001
Bisexual	2.21 (1.74-2.80)	< .001	2.25 (1.77-2.87)	< .001
Not sure	1.28 (0.97-1.68)	.080	1.31 (0.99-1.73)	.063
Ever used illicit drugs				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	5.75 (2.18-15.19)	.001	5.76 (2.19-15.14)	.001
Bisexual	3.13 (1.72-5.68)	.001	4.90 (2.61-9.19)	< .001
Not sure	5.40 (2.81-10.39)	< .001	6.38 (3.36-12.11)	< .001
Obese				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	1.51 (1.01-2.28)	.047	1.50 (0.98-2.30)	.060
Bisexual	1.55 (1.17-2.04)	.003	1.86 (1.41-2.47)	< .001
Not sure	1.22 (0.89-1.69)	.202	1.32 (0.95-1.82)	.092
Academic performance				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	0.88 (0.61-1.27)	.488	0.91 (0.62-1.34)	.637
Bisexual	0.65 (0.55-0.77)	< .001	0.51 (0.42-0.61)	< .001
Not sure	0.79 (0.59-1.05)	.099	0.70 (0.54-0.92)	.011
Played on a sports team				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	0.50 (0.35-0.70)	< .001	0.50 (0.35-0.72)	.001
Bisexual	0.47 (0.37-0.59)	< .001	0.52 (0.40-0.66)	< .001
Not sure	0.57 (0.43-0.75)	< .001	0.58 (0.44-0.77)	.001
Physical activity				
Heterosexual	1.00 (Reference)		1.00 (Reference)	
Lesbian/gay	0.51 (0.39-0.67)	< .001	0.53 (0.39-0.70)	< .001
Bisexual	0.48 (0.39-0.59)	< .001	0.63 (0.50-0.77)	< .001
Not sure	0.54 (0.43-0.69)	< .001	0.58 (0.45-0.75)	< .001

[a] Model controlled for age, sex, and race/ethnicity

Discussion

Drawing on minority stress theory and general strain theory, this thesis examined the health and mental health disparities between sexual minority youth and heterosexual youth in the United States. We found that of the 14,547 youth examined, 85.4% self-identified as heterosexual, 2.4% as lesbian/gay, 7.9% as bisexual, and 4.2% as unsure. This proportion is consistent with prior literature (Kann et al., 2018). Social networking has been theorized as a major contributor to the identification of sexual minority youth (Craig et al., 2015). Along with increased identification, a number of studies have found disparities between sexual minority

youth and heterosexual youth in the adversities of school safety concerns (Burton et al., 2014), violence (Kutsyuruba et al., 2015), victimization (Kosciw et al., 2018), substance use (Gamarel et al., 2018), mental health outcomes (Lucassen et al., 2017), suicidal behaviors (Hirsch et al., 2017), academic performance (Collier et al., 2013), and physical activity (Calzo et al., 2014). Thus, the findings of this thesis demonstrate disparities between all of these factors and implicate the importance of prevention/early intervention and targeted services to help support sexual minority youth mitigate the plethora of negative outcomes facing this vulnerable population.

Specifically, the findings of this thesis demonstrate that lesbian/gay, bisexual, and unsure youth are at greater risk of experiencing school bullying, cyberbullying, teen dating violence, sexual violence, cognitive difficulties, symptoms of depression, suicidal ideation, suicidal plan, and suicide attempt compared to heterosexual counterparts. Also, bisexual and unsure youth are at increased risk of reporting feeling unsafe going to school, being threatened on school property, and carrying a weapon on school property compared to heterosexual counterparts. Furthermore, bisexual and unsure youth are at increased risk of smoking cigarettes, using electronic vapor products, using alcohol, binge drinking, currently using marijuana, ever misusing prescription pain medication, ever using illicit drugs, and experiencing obesity compared to heterosexual youth. With regard to protective factors, lesbian/gay, bisexual, and unsure youth were less likely to play on a sports team or engage in physical activity compared to heterosexual youth. Additionally, bisexual and unsure youth were less likely to describe their grades as mostly A’s or B’s.

The heterosexual norm in society creates an overwhelming burden for sexual minority youth who are trying to succeed in school and in their personal life (Meyer, 2003), which is evidenced by the amount of school safety concerns and depressive symptoms/suicidal behaviors

being reported as experienced at increased rates compared to heterosexual youth. Furthermore, consistent with past studies that have found a high prevalence of intimate partner violence and sexual violence among sexual minority youth compared to their heterosexual peers (Edwards & Sylaska, 2013; Rostad et al., 2020; Zavala, 2017), we found that controlling for age, sex, and race/ethnicity, youth who self-identified as lesbian/gay, bisexual or unsure were significantly more likely to report victimization in the form of intimate partner violence or sexual violence. This increased rate of reporting of violence among sexual minority youth may demonstrate an underlying association in the well-being and safety of this high-risk population (Kutsyuruba et al., 2015; Kosciw et al., 2018). Thus, reasons for increased risk of violence may lead us to believe that safety is of the utmost concern for sexual minority youth (Kosciw et al., 2018).

With regards to school safety concerns, the findings that sexual minority youth are more likely to report feeling unsafe going to school, being threatened on school property, and carrying a weapon on school property may be indicators that the school environment is not providing a safe haven for the sexual minority population (Grossman et al., 2009). The lack of safety concerns may also be due to the fears of victimization resulting from a school climate that promotes heteronormativity (Toomey et al., 2012). Moreover, the fact that sexual minority youth are reporting less use of protective factors (academic performance, involvement in sports, physical activity) may demonstrate a flaw in the availability of support for sexual minority youth. Hence, the social pressures of fitting in, feeling safe and welcome, and encouraged are all important when considering the mental wellness of all youth. Sexual minority youth are less likely to report protective factors relative to their heterosexual peers. In support of this finding, Toomey et al. (2013) found that sexual minority males participated less in sports activity than

heterosexual males, and sexual minority females also participated less in sports activity than heterosexual females.

Additionally, the findings indicate that sexual minority youth were less likely to engage in the activity of playing on a sports team, which offers social support/social cohesion. Reasons for sexual minority youth not participating in sports as much as heterosexual youth may include the increased victimization, harassment, and stigma experienced by sexual minority youth compared to heterosexual youth (Mereish & Poteat, 2015). Furthermore, an increase in protective factors may help adolescents neutralize negative risk factors (Piko & Kovács, 2010); therefore, an increase in participation of sexual minority youth in sports activities and physical activity overall could lower sexual minority youth involvement in detrimental health risk behaviors.

Moreover, adolescents use maladaptive coping behaviors to handle stress, such as running away and using drugs (Tucker et al., 2011). Consequently, the results of this thesis found that sexual minority youth are at increased risk of reporting substance use in the form of tobacco, prescription pain mediation misuse, illegal drugs, and alcohol compared to heterosexual youth. An explanation for the increased risk may be the stigma associated with being included in the sexual minority population. Additionally, the pressure of stigma experienced by sexual minority youth and its influence on negative risk behaviors is not only a concern at school (Peter et al., 2016), but also in the home (Bruce et al., 2014). Therefore, the experience of stigma that sexual minority youth are subjected to in their personal lives at home may help explain suicidal behaviors, substance use, lack of protective factors, and experiences of homelessness resulting from reoccurring trauma happening in the home (Bruce et al., 2014; Tucker et al., 2011).

Implications for Social Work Policy and Practice

There are four main implications for social work policy and practice; 1) the protection of sexual minority youth from safety concerns at school to include bullying and victimization; 2) interventions for trauma from personal relationships; 3) substance use interventions; and 4) promotion of protective factors. Thus, Payne and Smith (2013) discuss the reduction of bullying of sexual minority youth in their study and found that intervening in anti-LGBT language at school, incorporating a system of monitoring, character education, empathy training, and creating school-wide efforts to increase feelings of community among students have worked to reduce bullying of sexual minority students in schools. Additionally, LGBTQ-inclusive curriculum in schools has been found to produce a feeling of safety for sexual minority youth (Poteat & Russell, 2013). Moreover, trauma from personal relationships may be addressed with trauma-informed care for sexual minority youth (McCormick et al., 2018). Furthermore, Slater et al. (2017) conclude that efforts to eliminate discrimination will reduce substance use among sexual minority youth. Also, with regards to protective factors, anti-discrimination policies have been found to increase pro-social behavior among sexual minority youth (Woodford et al., 2015). Therefore, overall policy and practice implications include school-wide efforts to eliminate bullying and victimization, education through LGBTQ curriculum, trauma-informed care, and anti-discrimination policies.

Limitations

The findings of this thesis should be interpreted in light of the following limitation. First, this thesis relied on secondary data, thereby limiting the possibility of examining other theoretically relevant factors such as stigma. Given the level of stigma youth experienced from coming out (Baams et al., 2015; Puckett et al., 2017), it would be important for future studies to

take into account the role of stigma in understanding the true association between sexual orientation and the outcome variables examined in this thesis. Second, the cross-sectional nature of the data also limits the ability to make any causal claims between sexual orientation and the outcome variables. Thus, only association can be inferred. Future studies that follow youth over time are needed to establish the process of coming out and its effects on health and mental health outcomes among youth. Lastly, although nationally representative, data for this is based on self-reports and may be subject to recall bias and underreporting.

Conclusion

In conclusion, drawing on an examination of data reported from adolescent high school students aged 14 to 18 that was derived from a large nationally representative sample, this thesis found that lesbian/gay, bisexual, and questioning youth are more likely to experience negative health and mental health outcomes such as school safety concerns, violence, victimization, poor mental health, suicidal behaviors, and substance use compared to heterosexual youth. Additionally, lesbian/gay, bisexual, and questioning youth are less likely to draw on protective factors compared to heterosexual youth. Moreover, this thesis extends past research on disparities of sexual minority youth and heterosexual youth in studies involving small samples or specific geographic locations that are not generalizable to the entire United States population. Finally, findings from this thesis demonstrate the need for further development of interventions to protect sexual minority youth from safety concerns at school to include bullying and victimization, trauma from personal relationships, substance use, and also promotion of welfare through factors such as academic performance, extracurricular activities such as sports involvement, and physical activity.

References

Abreu, R. L., & Kenny, M. C. (2018). Cyberbullying and LGBTQ youth: A systematic literature review and recommendations for prevention and intervention. *Journal of Child & Adolescent Trauma*, *11*(1), 81-97.

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, *30*(1), 47-88.

Andersen, J. P., & Blosnich, J. (2013). Disparities in adverse childhood experiences among sexual minority and heterosexual adults: Results from a multi-state probability-based sample. *PloS ONE*, *8*(1) e54691.

Baams, L., Grossman, A. H., & Russell, S. T. (2015). Minority stress and mechanisms of risk for depression and suicidal ideation among lesbian, gay, and bisexual youth. *Developmental Psychology*, *51*(5), 688-696.

Baiden, P., & Tadeo, S. K. (2019). Examining the association between bullying victimization and prescription drug misuse among adolescents in the United States. *Journal of Affective Disorders*, *259*, 317-324.

Baiden, P., & Tadeo, S. K. (2020). Investigating the association between bullying victimization and suicidal ideation among adolescents: evidence from the 2017 Youth Risk Behavior Survey. *Child Abuse & Neglect*, *102*, 104417.

Baiden, P., Tadeo, S. K., Graaf, G., & Respress, B. N. (2019). Examining the association between weapon carrying on school property and suicide attempt among adolescents in the United States. *Social Work in Public Health*, *34*(7), 570-582.

Belknap, J., Holsinger, K., & Little, J. S. (2014). Lesbian, gay, and bisexual youth incarcerated in delinquent facilities. *Handbook of LGBT Communities, Crime, and Justice*, 207-228.

Bouris, A., Guilamo-Ramos, V., Pickard, A., Shiu, C., Loosier, P. S., Dittus, P., ... & Waldmiller, J. M. (2010). A systematic review of parental influences on the health and well-being of lesbian, gay, and bisexual youth: Time for a new public health research and practice agenda. *The Journal of Primary Prevention*, *31*(5-6), 273-309.

Bowers, P. H., Walls, N. E., & Wisneski, H. (2015). The relationship between smoking and other drug use among sexual minority youth. *Journal of Gay & Lesbian Social Services*, *27*(1), 86-99.

Brener, N. D., Kann, L., Shanklin, S., Kinchen, S., Eaton, D. K., Hawkins, J., & Flint, K. H. (2013). Methodology of the youth risk behavior surveillance system—2013. *Morbidity and Mortality Weekly Report: Recommendations and Reports*, *62*(1), 1-20.

Bruce, D., Harper, G. W., & Bauermeister, J. A. (2015). Minority stress, positive identity development, and depressive symptoms: Implications for resilience among sexual minority male youth. *Psychology of Sexual Orientation and Gender Diversity*, *2*(3), 287-296.

Bruce, D., Stall, R., Fata, A., & Campbell, R. T. (2014). Modeling minority stress effects on homelessness and health disparities among young men who have sex with men. *Journal of Urban Health*, *91*(3), 568-580.

Button, D. M. (2016). Understanding the effects of victimization: Applying general strain theory to the experiences of LGBQ youth. *Deviant Behavior*, *37*(5), 537-556.

Button, D. M., & Worthen, M. G. (2014). General strain theory for LGBQ and SSB youth: The importance of intersectionality in the future of feminist criminology. *Feminist Criminology*, *9*(4), 270-297.

Button, D. M., & Worthen, M. G. (2017). Applying a general strain theory framework to understand school weapon carrying among LGBQ and heterosexual youth. *Criminology*, *55*(4), 806-832.

Burton, C. M., Marshal, M. P., & Chisolm, D. J. (2014). School absenteeism and mental health among sexual minority youth and heterosexual youth. *Journal of School Psychology*, *52*(1), 37-47.

Byrd, R., & Hays, D. G. (2013). Evaluating a safe space training for school counselors and trainees using a randomized control group design. *Professional School Counseling*, *17*(1), 2156759.

Calzo, J. P., Blashill, A. J., Brown, T. A., & Argenal, R. L. (2017). Eating disorders and disordered weight and shape control behaviors in sexual minority populations. *Current Psychiatry Reports*, *19*(8), 1-10.

Calzo, J. P., Roberts, A. L., Corliss, H. L., Blood, E. A., Kroshus, E., & Austin, S. B. (2014). Physical activity disparities in heterosexual and sexual minority youth ages 12–22 years old: roles of childhood gender nonconformity and athletic self-esteem. *Annals of Behavioral Medicine*, *47*(1), 17-27.

Ceglarek, P. J., & Ward, L. M. (2016). A tool for help or harm? How associations between social networking use, social support, and mental health differ for sexual minority and heterosexual youth. *Computers in Human Behavior*, *65*, 201-209.

Chaudoir, S. R., Wang, K., & Pachankis, J. E. (2017). What reduces sexual minority stress? A review of the intervention "toolkit". *Journal of Social Issues*, *73*(3), 586-617.

Collier, K. L., Van Beusekom, G., Bos, H. M., & Sandfort, T. G. (2013). Sexual orientation and gender identity/expression related peer victimization in adolescence: A systematic review of associated psychosocial and health outcomes. *Journal of Sex Research*, *50*(3-4), 299-317.

Corliss, H. L., Rosario, M., Wypij, D., Wylie, S. A., Frazier, A. L., & Austin, S. B. (2010). Sexual orientation and drug use in a longitudinal cohort study of US adolescents. *Addictive Behaviors*, *35*(5), 517-521.

Craig, S. L., McInroy, L. B., McCready, L. T., Di Cesare, D. M., & Pettaway, L. D. (2015). Connecting without fear: Clinical implications of the consumption of information and communication technologies by sexual minority youth and young adults. *Clinical Social Work Journal*, *43*(2), 159-168.

Day, J. K., Fish, J. N., Perez-Brumer, A., Hatzenbuehler, M. L., & Russell, S. T. (2017). Transgender youth substance use disparities: Results from a population-based sample. *Journal of Adolescent Health*, *61*(6), 729-735.

Edwards, K. M., & Sylaska, K. M. (2013). The perpetration of intimate partner violence among LGBTQ college youth: The role of minority stress. *Journal of Youth and Adolescence*, *42*(11), 1721-1731.

Eliason, M. J., Ingraham, N., Fogel, S. C., McElroy, J. A., Lorvick, J., Mauery, D. R., & Haynes, S. (2015). A systematic review of the literature on weight in sexual minority women. *Women's Health Issues*, *25*(2), 162-175.

Felner, J. K., Wisdom, J. P., Williams, T., Katuska, L., Haley, S. J., Jun, H. J., & Corliss, H. L. (2020). Stress, coping, and context: examining substance use among LGBTQ young adults with probable substance use disorders. *Psychiatric Services*, *71*(2), 112-120.

Fish, J. N., Schulenberg, J. E., & Russell, S. T. (2019). Sexual minority youth report high-intensity binge drinking: the critical role of school victimization. *Journal of Adolescent Health*, *64*(2), 186-193.

Fish, J. N., Watson, R. J., Porta, C. M., Russell, S. T., & Saewyc, E. M. (2017). Are alcohol-related disparities between sexual minority and heterosexual youth decreasing? *Addiction*, *112*(11), 1931-1941.

Galupo, M. P., Mitchell, R. C., & Davis, K. S. (2015). Sexual minority self-identification: Multiple identities and complexity. *Psychology of Sexual Orientation and Gender Diversity*, *2*(4), 355.

Gamarel, K. E., Mereish, E. H., Colby, S. M., Barnett, N. P., Hayes, K., & Jackson, K. M. (2018). Sexual minority disparities in substance use willingness among youth. *Substance Use & Misuse*, *53*(1), 170-175.

Goldbach, J. T., & Gibbs, J. (2015). Strategies employed by sexual minority adolescents to cope with minority stress. *Psychology of Sexual Orientation and Gender Diversity*, *2*(3), 297-306.

Goldbach, J. T., Schrager, S. M., Dunlap, S. L., & Holloway, I. W. (2015). The application of minority stress theory to marijuana use among sexual minority adolescents. *Substance Use & Misuse*, *50*(3), 366-375.

Goldbach, J. T., Tanner-Smith, E. E., Bagwell, M., & Dunlap, S. (2014). Minority stress and substance use in sexual minority adolescents: A meta-analysis. *Prevention Science*, *15*(3), 350-363.

Goodenow, C., Watson, R. J., Adjei, J., Homma, Y., & Saewyc, E. (2016). Sexual orientation trends and disparities in school bullying and violence-related experiences, 1999–2013. *Psychology of Sexual Orientation and Gender Ddiversity*, *3*(4), 386-396.

Gower, A. L., Rider, G. N., Brown, C., McMorris, B. J., Coleman, E., Taliaferro, L. A., & Eisenberg, M. E. (2018). Supporting transgender and gender diverse youth: Protection against emotional distress and substance use. *American Journal of Preventive Medicine*, *55*(6), 787-794.

Graham, R., & Wood Jr, F. R. (2019). Associations between cyberbullying victimization and deviant health risk behaviors. *The Social Science Journal*, *56*(2), 183-188.

Grammer, A. C., Byrne, M. E., Pearlman, A. T., Klein, D. A., & Schvey, N. A. (2019). Overweight and obesity in sexual and gender minority adolescents: A systematic review. *Obesity Reviews*, *20*(10), 1350-1366.

Grossman, A. H., Haney, A. P., Edwards, P., Alessi, E. J., Ardon, M., & Howell, T. J. (2009). Lesbian, gay, bisexual and transgender youth talk about experiencing and coping with school violence: A qualitative study. *Journal of LGBT Youth*, *6*(1), 24-46.

Hadland, S. E., Austin, S. B., Goodenow, C. S., & Calzo, J. P. (2014). Weight misperception and unhealthy weight control behaviors among sexual minorities in the general adolescent population. *Journal of Adolescent Health*, *54*(3), 296-303.

Hall, W. J. (2018). Psychosocial risk and protective factors for depression among lesbian, gay, bisexual, and queer youth: A systematic review. *Journal of Homosexuality*, *65*(3), 263-316.

Hatchel, T., Ingram, K. M., Mintz, S., Hartley, C., Valido, A., Espelage, D. L., & Wyman, P. (2019). Predictors of suicidal ideation and attempts among LGBTQ adolescents: the roles of help-seeking beliefs, peer victimization, depressive symptoms, and drug Use. *Journal of Child and Family Studies*, *28*(9), 2443-2455.

Heck, N. C., Livingston, N. A., Flentje, A., Oost, K., Stewart, B. T., & Cochran, B. N. (2014). Reducing risk for illicit drug use and prescription drug misuse: High school gay-straight alliances and lesbian, gay, bisexual, and transgender youth. *Addictive Behaviors*, *39*(4), 824-828.

Higa, D., Hoppe, M. J., Lindhorst, T., Mincer, S., Beadnell, B., Morrison, D. M., ... & Mountz, S. (2014). Negative and positive factors associated with the well-being of lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ) youth. *Youth & Society*, *46*(5), 663-687.

Hirsch, J. K., Cohn, T. J., Rowe, C. A., & Rimmer, S. E. (2017). Minority sexual orientation, gender identity status and suicidal behavior: Serial indirect effects of hope, hopelessness and depressive symptoms. *International Journal of Mental Health and Addiction*, *15*(2), 260-270.

Hottes, T. S., Bogaert, L., Rhodes, A. E., Brennan, D. J., & Gesink, D. (2016). Lifetime prevalence of suicide attempts among sexual minority adults by study sampling strategies: a systematic review and meta-analysis. *American Journal of Public Health*, *106*(5), e1-e12.

Johnson III, R. G., Rivera, M. A., & Lopez, N. (2018). A public ethics approach focused on the lives of diverse LGBTQ homeless youth. *Public Integrity*, *20*(6), 611-624.

Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., ... & Lim, C. (2018). Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries*, *67*(8), 1-114.

Kann, L., Olsen, E. O. M., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., ... & Thornton, J. (2016). Sexual identity, sex of sexual contacts, and health-related behaviors among students in grades 9–12—United States and selected sites, 2015. *Morbidity and Mortality Weekly Report: Surveillance Summaries*, *65*(9), 1-202.

Katz-Wise, S. L., Scherer, E. A., Calzo, J. P., Sarda, V., Jackson, B., Haines, J., & Austin, S. B. (2015). Sexual minority stressors, internalizing symptoms, and unhealthy eating behaviors in sexual minority youth. *Annals of Behavioral Medicine*, *49*(6), 839-852.

Kecojevic, A., Wong, C. F., Corliss, H. L., & Lankenau, S. E. (2015). Risk factors for high levels of prescription drug misuse and illicit drug use among substance-using young men who have sex with men (YMSM). *Drug and Alcohol Dependence*, *150*, 156-163.

Kidd, J. D., Jackman, K. B., Wolff, M., Veldhuis, C. B., & Hughes, T. L. (2018). Risk and protective factors for substance use among sexual and gender minority youth: a scoping review. *Current Addiction Reports*, *5*(2), 158-173.

Konishi, C., Saewyc, E., Homma, Y., & Poon, C. (2013). Population-level evaluation of school-based interventions to prevent problem substance use among gay, lesbian and bisexual adolescents in Canada. *Preventive Medicine*, *57*(6), 929-933.

Kopels, S., & Paceley, M. S. (2012). Reducing bullying toward LGBTQ youths in schools. *School Social Work Journal*, *37*(1), 96-111.

Kosciw, J. G., Greytak, E. A., Zongrone, A. D., Clark, C. M., & Truong, N. L. (2018). The 2017 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual, Transgender, and Queer Youth in Our Nation's Schools. *Gay, Lesbian and Straight Education Network (GLSEN)*.

Kutsyuruba, B., Klinger, D. A., & Hussain, A. (2015). Relationships among school climate, school safety, and student achievement and well-being: a review of the literature. *Review of Education*, *3*(2), 103-135.

Livingston, N. A., Heck, N. C., Flentje, A., Gleason, H., Oost, K. M., & Cochran, B. N. (2015). Sexual minority stress and suicide risk: Identifying resilience through personality profile analysis. *Psychology of Sexual Orientation and Gender Diversity*, *2*(3), 321.

Lowry, R., Dunville, R., Robin, L., & Kann, L. (2017). Early sexual debut and associated risk behaviors among sexual minority youth. *American Journal of Preventive Medicine*, *52*(3), 379-384.

Lucassen, M. F., Merry, S. N., Hatcher, S., & Frampton, C. M. (2015). Rainbow SPARX: A novel approach to addressing depression in sexual minority youth. *Cognitive and Behavioral Practice*, *22*(2), 203-216.

Lucassen, M. F., Stasiak, K., Samra, R., Frampton, C. M., & Merry, S. N. (2017). Sexual minority youth and depressive symptoms or depressive disorder: A systematic review and meta-analysis of population-based studies. *Australian & New Zealand Journal of Psychiatry*, *51*(8), 774-787.

Luk, J. W., Gilman, S. E., Sita, K. R., Cheng, C., Haynie, D. L., & Simons-Morton, B. G. (2019). Cyber behaviors among heterosexual and sexual minority youth: subgroup differences and associations with health indicators. *Cyberpsychology, Behavior, and Social Networking*, *22*(5), 315-324.

Liao, K. Y. H., Kashubeck-West, S., Weng, C. Y., & Deitz, C. (2015). Testing a mediation framework for the link between perceived discrimination and psychological distress among sexual minority individuals. *Journal of Counseling Psychology*, *62*(2), 226.

Liu, R. T., & Mustanski, B. (2012). Suicidal ideation and self-harm in lesbian, gay, bisexual, and transgender youth. *American Journal of Preventive Medicine*, *42*(3), 221-228.

Marshall, E., Claes, L., Bouman, W. P., Witcomb, G. L., & Arcelus, J. (2016). Non-suicidal self-injury and suicidality in trans people: a systematic review of the literature. *International Review of Psychiatry*, *28*(1), 58-69.

Martin-Storey, A. (2015). Prevalence of dating violence among sexual minority youth: Variation across gender, sexual minority identity and gender of sexual partners. *Journal of Youth and Adolescence*, *44*(1), 211-224.

Marx, R. A., & Kettrey, H. H. (2016). Gay-straight alliances are associated with lower levels of school-based victimization of LGBTQ+ youth: A systematic review and meta-analysis. *Journal of Youth and Adolescence*, *45*(7), 1269-1282.

McCormick, A., Scheyd, K., & Terrazas, S. (2018). Trauma-informed care and LGBTQ youth: Considerations for advancing practice with youth with trauma experiences. *Families in Society*, *99*(2), 160-169.

Mereish, E. H., & Poteat, V. P. (2015). Let's get physical: sexual orientation disparities in physical activity, sports involvement, and obesity among a population-based sample of adolescents. *American Journal of Public Health*, *105*(9), 1842-1848.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin*, *129*(5), 674.

Miranda-Mendizábal, A., Castellví, P., Parés-Badell, O., Almenara, J., Alonso, I., Blasco, M. J., ... & Piqueras, J. A. (2017). Sexual orientation and suicidal behaviour in adolescents and young adults: systematic review and meta-analysis. *The British Journal of Psychiatry*, *211*(2), 77-87.

Mustanski, B., & Liu, R. T. (2013). A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Archives of Sexual Behavior*, *42*(3), 437-448.

Newcomb, M. E., Heinz, A. J., & Mustanski, B. (2012). Examining risk and protective factors for alcohol use in lesbian, gay, bisexual, and transgender youth: A longitudinal multilevel analysis. *Journal of Studies on Alcohol and Drugs*, *73*(5), 783-793.

Olweus, D. (1999). Sweden. In P. K. Smith, P. Slee, Y. Morita, R. Catalano, J. Junger-Tas & D. Olweus (Eds.), *The nature of school bullying: A cross-national perspective* (pp. 7-27). New York: Routledge.

Panfil, V. R. (2014). Gay gang-and crime-involved men's experiences with homophobic bullying and harassment in schools. *Journal of Crime and Justice*, *37*(1), 79-103.

Payne, E., & Smith, M. (2013). LGBTQ kids, school safety, and missing the big picture: How the dominant bullying discourse prevents school professionals from thinking about systemic marginalization or… why we need to rethink LGBTQ bullying. *QED: A Journal in GLBTQ Worldmaking*, 1-36.

Peter, T., Taylor, C., & Campbell, C. (2016). “You can't break… when you're already broken”: The importance of school climate to suicidality among LGBTQ youth. *Journal of Gay & Lesbian Mental Health*, *20*(3), 195-213.

Phillips II, G., Turner, B., Salamanca, P., Birkett, M., Hatzenbuehler, M. L., Newcomb, M. E., ... & Mustanski, B. (2017). Victimization as a mediator of alcohol use disparities between sexual minority subgroups and sexual majority youth using the 2015 National Youth Risk Behavior Survey. *Drug and Alcohol Dependence*, *178*, 355-362.

Piko, B. F., & Kovács, E. (2010). Do parents and school matter? Protective factors for adolescent substance use. *Addictive Behaviors*, *35*(1), 53-56.

Poteat, V. P., & Russell, S. T. (2013). Understanding homophobic behavior and its implications for policy and practice. *Theory into Practice*, *52*(4), 264-271.

Poteat, V. P., Russell, S. T., & Dewaele, A. (2019). Sexual health risk behavior disparities among male and female adolescents using identity and behavior indicators of sexual orientation. *Archives of Sexual Behavior*, *48*(4), 1087-1097.

Puckett, J. A., Horne, S. G., Surace, F., Carter, A., Noffsinger-Frazier, N., Shulman, J., ... & Mosher, C. (2017). Predictors of sexual minority youth's reported suicide attempts and mental health. *Journal of Homosexuality*, *64*(6), 697-715.

Reisner, S. L., Biello, K., Perry, N. S., Gamarel, K. E., & Mimiaga, M. J. (2014). A compensatory model of risk and resilience applied to adolescent sexual orientation disparities in nonsuicidal self-injury and suicide attempts. *American Journal of Orthopsychiatry*, *84*(5), 545-556.

Reisner, S. L., Greytak, E. A., Parsons, J. T., & Ybarra, M. L. (2015). Gender minority social stress in adolescence: disparities in adolescent bullying and substance use by gender identity. *The Journal of Sex Research*, *52*(3), 243-256.

Rodgers, S. M. (2017). Transitional age lesbian, gay, bisexual, transgender, and questioning youth: issues of diversity, integrated identities, and mental health. *Child and Adolescent Psychiatric Clinics*, *26*(2), 297-309.

Ross, L. E., Salway, T., Tarasoff, L. A., MacKay, J. M., Hawkins, B. W., & Fehr, C. P. (2018). Prevalence of depression and anxiety among bisexual people compared to gay, lesbian, and heterosexual individuals: A systematic review and meta-analysis. *The Journal of Sex Research*, *55*(4-5), 435-456.

Rostad, W. L., Clayton, H. B., Estefan, L. F., & Johns, M. M. (2020). Substance use and disparities in teen dating violence victimization by sexual identity among high school students. *Prevention Science*, *21*(3), 398-407.

Rukus, J., Stogner, J., & Miller, B. (2017). LGBT novel drug use as contextualized through control, strain, and learning theories. *Social Science Quarterly*, *98*(5), 1711-1730.

Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior, 15*(2), 112-120.

Slater, M. E., Godette, D., Huang, B., Ruan, W. J., & Kerridge, B. T. (2017). Sexual orientation-based discrimination, excessive alcohol use, and substance use disorders among sexual minority adults. *LGBT Health*, *4*(5), 337-344.

Snyder, S. M., Hartinger-Saunders, R., Brezina, T., Beck, E., Wright, E. R., Forge, N., & Bride, B. E. (2016). Homeless youth, strain, and justice system involvement: An application of general strain theory. *Children and Youth Services Review*, *62*, 90-96.

Spivey, L. A., & Prinstein, M. J. (2019). A preliminary examination of the association between adolescent gender nonconformity and suicidal thoughts and behaviors. *Journal of Abnormal Child Psychology*, *47*(4), 707-716.

Steele, J. L. (2016). Race and general strain theory: Examining the impact of racial discrimination and fear on adolescent marijuana and alcohol use. *Substance Use & Misuse*, *51*(12), 1637-1648.

Toomey, R. B., McGuire, J. K., & Russell, S. T. (2012). Heteronormativity, school climates, and perceived safety for gender nonconforming peers. *Journal of adolescence*, *35*(1), 187-196.

Toomey, R. B., & Russell, S. T. (2013). An Initial Investigation of Sexual Minority Youth Involvement in School-Based Extracurricular Activities. *Journal of Research on Adolescence*, *23*(2), 304-318.

Toomey, R. B., Huynh, V. W., Jones, S. K., Lee, S., & Revels-Macalinao, M. (2017). Sexual minority youth of color: A content analysis and critical review of the literature. *Journal of Gay & Lesbian Mental Health*, *21*(1), 3-31.

Tucker, J. S., Edelen, M. O., Ellickson, P. L., & Klein, D. J. (2011). Running away from home: A longitudinal study of adolescent risk factors and young adult outcomes. *Journal of Youth and Adolescence*, *40*(5), 507-518.

Tyler, K. A., & Ray, C. M. (2019). Risk and protective factors for substance use among youth experiencing homelessness. *Children and Youth Services Review*, *107*, 104548.

Waller, A. P., Lokhande, A. P., Ekambaram, V., Deshpande, S. N., & Ostermeyer, B. (2018). Cyberbullying: An Unceasing Threat in Today's Digitalized World. *Psychiatric Annals*, *48*(9), 408-415.

Watson, R. J., Adjei, J., Saewyc, E., Homma, Y., & Goodenow, C. (2017). Trends and disparities in disordered eating among heterosexual and sexual minority adolescents. *International Journal of Eating Disorders*, *50*(1), 22-31.

Whitton, S. W., Dyar, C., Newcomb, M. E., & Mustanski, B. (2018). Effects of romantic involvement on substance use among young sexual and gender minorities. *Drug and Alcohol Dependence*, *191*, 215-222.

Willging, C. E., Green, A. E., & Ramos, M. M. (2016). Implementing school nursing strategies to reduce LGBTQ adolescent suicide: a randomized cluster trial study protocol. *Implementation Science 11*(1), 145-11.

Wilson, S. M., Gilmore, A. K., Rhew, I. C., Hodge, K. A., & Kaysen, D. L. (2016). Minority stress is longitudinally associated with alcohol-related problems among sexual minority women. *Addictive Behaviors*, *61*, 80-83.

Wolff, J. R., & Himes, H. L. (2010). Purposeful exclusion of sexual minority youth in Christian higher education: The implications of discrimination. *Christian Higher Education*, *9*(5), 439-460.

Woodford, M. R., Kulick, A., & Atteberry, B. (2015). Protective factors, campus climate, and health outcomes among sexual minority college students. *Journal of Diversity in Higher Education*, *8*(2), 73.

Youatt, E. J., Johns, M. M., Pingel, E. S., Soler, J. H., & Bauermeister, J. A. (2015). Exploring young adult sexual minority women's perspectives on LGBTQ smoking. *Journal of LGBT Youth*, *12*(3), 323-342.

Zavala, E. (2017). A multi-theoretical framework to explain same-sex intimate partner violence perpetration and victimization: A test of social learning, strain, and self-control. *Journal of Crime and Justice*, *40*(4), 478-496.

Zavala, E., & Guadalupe-Diaz, X. (2018). Assessing Emotional Abuse Victimization and Perpetration: A Multi-Theoretical Examination. *Deviant Behavior*, *39*(11), 1515-1532.