The Combined Effects of Discrimination and Holding Multiple Intersecting Marginalized Identities on Substance Use Among Adolescents

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THE COMBINED EFFECTS OF DISCRIMINATION AND HOLDING MULTIPLE INTERSECTING MARGINALIZED IDENTITIES ON SUBSTANCE USE AMONG ADOLESCENTS

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Abstract

Individuals with multiple intersecting marginalized identities may be at greater risk for negative outcomes and exposure to discrimination during development. The aim of this study was to investigate the effects of discrimination and having multiple marginalized identities on substance use among Minnesota youth. Using data gathered from the 2019 administration of the Minnesota Student Survey, a large statewide survey of 80,456 9th and 11th grade students, this study aimed to identify how holding multiple intersecting identities related to experiences of discrimination and substance use in Minnesota youth. Findings revealed that participants with more marginalized identity statuses experienced higher rates of discrimination and engaged in more frequent substance use than those with fewer marginalized identities. The relationship between holding multiple intersecting oppressed identity statuses and greater substance use was fully mediated by greater perceived discrimination among students with more marginalized identity statuses. In fact, once discrimination was included in the model, the relationship between multiple intersecting oppressed identities and substance use was statistically significant and negative. This suggests that exposure to discrimination may explain the increased risk of substance use among students with more marginalized identities, and that in the absence of discrimination, having multiple marginalized identities may have a protective effect against substance use. This study contributes to the growing research in intersectionality in adolescence and begins the conversation on managing the impact of discrimination and its associated stress.

Keywords: Intersectionality, discrimination, substance use
The Combined Effects of Discrimination and Holding Multiple Intersecting Marginalized Identities on Substance Use Among Adolescents

Chapter 1: Introduction

Bullying contributes to deterioration of an individual’s physical and mental health (Elamé, 2013). Discriminatory bullying is a specific form of bullying that is focused on aspects of an individual’s identity, such as age, gender, race, sexual orientation, religion, or disability. Discriminatory bullying can target more than one intersecting aspect of a person’s identity (e.g., being bullied for being a gay Black teen or a Muslim transgender woman), and the impact of discriminatory bullying on multiple intersecting aspects of adolescent identity is understudied (Balsam et al., 2011; Bowleg et al. 2003; Harnois et al., 2020; Meyer, 2012; Mereish & Bradford, 2014). The aim of this study is to explore how discriminatory bullying may affect youth mental health, especially substance use.

Bullying is defined by Sharp and Smith (2002) as “abuse between equals” (p. 3). Elamé (2013) defined bullying as a harmful and common behavior that is aggressive in nature against an individual with a limited ability to defend themselves. Broken down further, bullying behavior consists of a complex range of human behaviors that can present in many forms, including direct forms, such as physical or verbal attacks on a victim (e.g., hitting, pushing, spitting, name calling, threats, etc.), as well as indirect forms. Direct forms of bullying are overt, and there is little to no effort made to conceal the abuse (Fischer et al., 2019). Indirect forms of bullying include more subtle behavior that is intended to harm, humiliate, or isolate an individual from others (e.g., spreading rumors or telling peers to ignore the individual). More recently, cyberbullying has developed as another indirect form of bullying (Harbin et al., 2019).
Discriminatory Bullying

Discriminatory bullying is a form of oppression towards individuals who do not hold power or a majority status (Elamé, 2013). Discriminatory bullying is different from general bullying in that it specifically targets an individual’s marginalized identity. Discriminatory bullying may include racism, religious discrimination, sexism, discrimination based on sexual orientation, ableism, and sizeism (Elamé, 2013). This form of bullying can produce cultural and personal shame as well as internalized hate. Discriminatory bullying is under-reported by students and schools for a variety of reasons, including victims’ fears of negative consequences or retaliation for reporting discriminatory bullying incidents; a lack of understanding of the impact of discriminatory bullying; concerns about protecting the reputations of the bully, the victim, and/or the school; and an unwillingness by schools to acknowledge the problem. Schools are not required to maintain records of discriminatory bullying, and as a result, such bullying is also under-recorded (Bhopal, 2018).

Racist Bullying

Racist bullying can be defined as targeting a student due to their race, using racial slurs, or harassing a student based on their racial identity (Sullivan, 2005). Russell et al. (2012) found that 15.8% of Wisconsin and Californian sixth through 12th grade students reported being victims of racial discrimination at school. Some studies actually find that a majority of Black, Indigenous, and other students of color (BIPOC) have reported that racism affects them at school (Fry et al., 2008; Hope et al., 2015). For example, in 2007, 84% of Latinx students in U.S. public schools believed discrimination was a problem at their school (Fry et al., 2008). Black students have reported unfair or abusive verbal, psychological, and physical treatment by peers at higher rates than White students in high schools in at least one study (Hope et al., 2015). Racist bullying
causes victims harm. For example, in a study using data from the *Project on Human Development in Chicago Neighborhoods, Longitudinal Cohort Study*, Unnever, Cullen, and Barnes (2016) found increased racial discrimination in schools was associated with decreased grades, self-esteem, and connection to scholarly material for 9- and 12-year-olds. Racial discrimination was also associated with increased suspensions and detentions in this study.

**Religious Bullying and Discrimination**

Religious discrimination includes bullying related to the victim’s religious beliefs, practices, and/or dress; for example, a Muslim girl being pushed because she was wearing a Hijab (Weller et al., 2001). Although holding a non-Christian religious faith is associated with higher rates of discrimination in the United States compared to the experiences of those who identify as Christian, some studies have found that being involved in any religion, including Christianity, may be a risk-factor for bullying (Hinduja, 2019). Among a sample of students in England and Wales, religious discrimination from peers was reported to be a problem for three-quarters of Jewish, Hindu, Muslim, and Sikh students and 60% of Christian respondents (Weller et al., 2001). A study in 2014 by Dadabhoy examined experienced discrimination of Muslim students in California. Among the 621 respondents, she found that 27% of girls who wear a headscarf experienced discrimination from their teachers and 20% of the boys and girls experienced discrimination from a staff member at their school. Of the students who experienced discrimination, 41% disagreed with or were unsure if telling an adult helped solve the problem of discrimination when it was experienced. Further, among those who did report incidents of discrimination against adults in their school only 34% were happy with the response. A systematic issue of discrimination found in this study was exemplified by 33% of the
respondents reporting that their teachers and administrators were not responsive to their religious accommodation requests (Dadabhoy, 2014).

**Sexist and Sexual Orientation Bullying**

Gender differences in bullying have been frequently investigated, but boys and girls engage in bullying at similar rates (Leaper et al., 2018). Bullying based on the victim’s gender, gender expression, and sexual orientation is common and harmful. Both sexist bullying and bullying due to sexual orientation commonly take the form of sexual harassment (Leaper et al., 2018 & Elamé, 2013). There are distinct differences between sexist bullying and sexual harassment, although there is some overlap in the two behaviors, and both target victims based on gender and sexual identity. Sextist bullying is humiliation or abuse at the hands of peers based on someone’s gender or gender expression (Gruber & Fineran, 2016). According to the U.S. Department of Education (2010), sexual harassment is “unwelcome conduct of a sexual nature” (p. 2) This includes unwelcome sexual advances; verbal, nonverbal, or physical conduct of a sexual nature; or requests for sexual favors. While sexual harassment is often sexist in nature and can be considered bullying, not all sexist bullying can be considered sexual harassment (e.g., not including girls in activities, implying that girls are less intelligent, making fun of the clothing girls wear because it is not stereotypically feminine, making fun of boys for appearing effeminate, etc., Gruber & Fineran, 2016; U.S. Department of Education, 2010). Sexual harassment and sexist bullying target people of all genders. In fact, transgender youth experience the highest rate of sexual harassment at 81%, followed by gender non-conforming/other gender youth at 69%, as compared to 52% in cisgender girls and 34% in cisgender boys (Mitchell et al., 2014).
Homophobic bullying can be defined as bullying due to someone’s sexual orientation when they are not heterosexual; this can also include sexual harassment (Green, 2008). Homophobic bullying, like other forms of bullying, has an impact on mental health and behavior; studies have shown that experiencing such bullying was associated with higher rates of internalizing and externalizing symptoms in youth victims (Green, 2008; Hong & Espelage, 2012; Solberg & Olweus, 2003). Several studies indicate that sexual harassment is also higher among gay and bisexual youth compared to heterosexual youth (Daley et al., 2007, Leaper et al., 2018; Mitchell et al., 2007). Mitchell et al. (2014) found that the prevalence of sexual harassment against LGBT adolescents in the United States was disproportionately higher than their cisgender, heterosexual peers. The yearly prevalence of sexual harassment was highest among lesbian/queer girls (72%) followed by bisexual girls (66%), gay/queer boys (66%), questioning girls (53%), bisexual boys (50%), and questioning boys (47 %). Sexual harassment was also disproportionately higher among heterosexual girls (43%) compared to heterosexual boys (24%).

**Alcohol, Tobacco, and Illicit Drug Use and Bullying**

Individuals who experience discriminatory bullying may cope with these experiences in adaptive or maladaptive ways. Bullying may intensify the risk of alcohol, tobacco, and illicit drug use both directly and indirectly, as a result of increased use to cope with mental health concerns. Being victimized by peers, and experiencing behaviors such as pushing, hitting, spitting, punching, tripping, choking, etc., was strongly related to higher rates of alcohol use in boys; this effect was similar (and statistically significant) in girls, but the effect size in girls was not as large (Eisenberg et al., 2015). Another study also found that girls were more likely to engage in alcohol use if they were victims of bullying (Hertz et al., 2015). Similarly, in the 2013 Youth Risk Behavior Survey (Case, et al., 2016; Centers for Disease Control and Prevention,
2013), girls who were bullied both at school and electronically reported the highest likelihood of engaging in tobacco use, whereas boys’ tobacco use only increased if they had experienced cyberbullying, suggesting that girls and boys may respond to different types of bullying with different risk behaviors (Case, et al., 2016). However, boys had higher rates of tobacco use than girls according to the 2011 version of the Youth Risk Behavior Survey and bullying was determined to be a risk factor for tobacco use in both boys and girls (Centers for Disease Control and Prevention, 2011; Hertz et al., 2015). Illegal drug use is also theorized to be a coping mechanism for students who experience bullying, and victims of bullying do engage in drug use earlier than other students (Ttofi et al., 2016).

**The Current Study**

The aim of this study was to investigate the combined effects of discrimination and having multiple marginalized identities on substance use among Minnesota youth. A better understanding of the potential impact on adolescents of holding multiple intersecting marginalized identities and experiencing discriminatory bullying is critical to understanding the origins of substance use. Understanding the relationships among intersecting identities, discrimination, and substance use in adolescents will allow psychologists and educators to improve and engage in earlier prevention programs for risk behaviors. Improving our understanding of the impact of discrimination and bullying behaviors may also elicit needed policy changes in record keeping, including keeping incident reports of bullying, documenting phone calls with caregivers, and discrimination monitoring.

**Importance of this Study**

Identity formation happens between the ages of 12-18 (Erikson, 1963; Piaget & Inhelder, 2008). In general, people who are exposed to discrimination and oppression are at increased risk
for poor outcomes, including substance use (Brown & Bigler, 2005; Cooper et al., 2008; McKown, 2004). People who identify with multiple marginalized identities, also referred to in the literature as marginalized identities, are also generally at increased risk for poor outcomes, including substance use (Batejan, Jarvi, & Swenson, 2015; Goldbach et al., 2014; Holt et al., 2015; King et al., 2008; Marshal et al, 2011; Ttofi et al., 2016). The additive effects of both intersectionality and discrimination on people across the lifespan is concerning for clinicians and health care workers. However, adolescents are at even greater risk for the negative effects of threats to their identity and discrimination, due to developmental factors. A major threat to individuals’ quality of life and positive outcomes is substance use. Substance use is concerning at all ages, but is particularly concerning for minors, because of their developing brain and bodies (Bucchianeri et al. 2014; Eisenberg et al., 2016; Newcomb et al, 2012). This study will add to the emerging research into risk factors for substance use among adolescents, and how substance use may relate to their multicultural identities.
Chapter 2: Literature Review

Childhood and adolescence are developmentally sensitive periods for mental health problems and identity development concerns, especially for kids and teens who are exposed to discrimination or who hold oppressed identity statuses (Mereish & Bradford, 2014). A longitudinal study assessing the prevalence rates of psychiatric disorders in 1,420 children and adolescents ages 9 through 16 found that the 3-month prevalence rate of any psychiatric disorder was 13.3% among this group (Costello et al., 2003). During the study, 36.7% of participants had at least one psychiatric diagnosis. Some disorders decreased in prevalence as children got older, such as separation anxiety disorder and attention deficit/hyperactivity disorder (ADHD). Other disorders increased in prevalence, such as social anxiety disorder, panic disorder, depression, and substance use disorders. Children with a history of a psychiatric disorder were three times more likely to have another psychiatric disorder as they got older. Bagalman and Napili (2014) compiled the data from three nationally representative surveys to estimate the prevalence of mental illness in the United States. The National Comorbidity Survey Replication-Adolescent Supplement (NCS-A), administered to teens ages 13 to 17 (N = 10,148), found that, whereas 26.2-32.4% of adults in the study had a 12-month prevalence of any mental illness, 40.8% of adolescents had a 12-month prevalence of a mental illness (Bagalman & Napili, 2014; Kessler, 2001).

Raphael et al. (2006) noted that children and adolescents are especially vulnerable to mental health problems due to their developmental needs. Many aspects of a minor’s life and development intertwine in complex ways, including family structure, parenting styles, experience with illness, both personal and parental, attachment style, biological factors, peer socialization, and exposure to abuse and neglect (Raphael et al., 2006). Children and adolescents
are dependent on the care of others and do not have the capacity to cope with stressors as well as independent adults.

The developmental trajectory for adolescents in marginalized social groups is impacted by marginalization. According to Bronfenbrenner’s (1979) social-ecological model, the environment a child is exposed to affects the child, and vice versa. The chronosystem, which tracks the movement of time through the lifespan, can involve major life transitions like puberty and historical events. Both affect a child and their worldview; for example, a Muslim child may have viewed the world differently before and after the events of 9/11. For example, Giuliani et al., 2018, discussed the increase in fear and suspicion toward Muslim communities as a response to terrorism specifically after 9/11 in Europe, and how this fear was sometimes generalized to Sikh and non-Muslim Middle Eastern individuals. Prejudices that anyone with an Arabic or Arabic-sounding name, or anyone with brown skin, or anyone wearing a head covering was Muslim and therefore dangerous were common themes found in the research. These worldview shifts can also affect development by increasing children’s exposure to stress and adverse experiences. The macrosystem and exosystem in Bronfenbrenner’s model (1979) include the attitudes of the culture, media, and government, which all are affected by discriminatory views such as cultural appropriation, nonrepresentation of BIPOC individuals in the media, and institutional biases. Institutional and systematic bias occur at all layers of the Bronfenbrenner model and affect governmental and institutional policies and procedures. Community factors are also included in Bronfenbrenner’s model. This includes BIPOC individuals being more likely to reside in low-income neighborhoods, be exposed to poverty and crime (Veiga et al., 2022). These community factors impact all individuals in the system and individuals also impact one another. For example, a family residing in a higher crime neighborhood may lead a parent to
work extra shifts at their job to eventually live in a safer environment. In response, a child may not build a strong connection with, or may even resent their parent for not spending time with them. If the child expresses these feelings, the parent may be less inclined to take extra shifts, and the family may continue to reside in the neighborhood and be exposed to crime (Bronfenbrenner, 1986). Policies and procedures that are biased against members of marginalized groups lead directly and indirectly, through these kinds of interactions across layers of the model, to lower quality education and healthcare for those groups, leading to health disparities (Levine & Breshears, 2019; Seng et al., 2012).

**Identity Development in Teens and Children**

Childhood and adolescence are also critical periods for identity development. The bulk of identity development is theorized to occur during childhood and adolescence (Meeus et al., 1999). Identity development begins in infancy. Infants as young as 6 months old can recognize themselves in a mirror (Bertenthal & Fischer, 1978). Racial and ethnic identity development processes can also begin as early as infancy and early childhood (Kroger, 2006). For example, babies’ gazes are drawn to faces of the same-race adults, providing evidence that infants can identify and show preferences for people they perceive as similar to individuals they are used to seeing (Wheeler et al., 2011).

However, critical aspects of identity development also occur in adolescence. Erikson (1963) theorized that the *identity versus role confusion* stage occurs for children between ages 12 and 18. During this stage, teens begin to develop a sense of self by exploring their personal beliefs and values (Erikson, 1963). Piaget’s stages of cognitive development, similarly, refer to the *formal operational stage*, which begins at age 12, as teens and young adults begin to develop abstract and theoretical thought, deductive logic, and to think about moral, ethical, and social
issues that are essential for social identity development (Piaget & Inhelder, 2008). Marcia’s identity status model (1966) expands upon Erikson’s model with the ideas of *identity diffusion, foreclosure, moratorium, and achievement*. Diffusion describes an adolescent who has not explored or committed to an identity. Foreclosure involves commitment without exploration. Moratorium is active exploration without a commitment or an unclear commitment. Finally, Identity Achievement occurs after an adolescent finishes exploration and makes a commitment to their identity.

**Racial and Ethnic Identity Development**

Umaña-Taylor et al. (2014) discussed the development of ethnic and racial identity across the lifespan. According to these authors, in early childhood, individuals begin differentiating between themselves and others and start to label their own and others’ races and ethnicities, gain knowledge about other identities, and begin to be able to understand that race does not change over time. In middle childhood, children begin to understand social hierarchy and become aware of racial and ethnic biases. Beginning in adolescence and continuing through young adulthood, transitions and social demands such as discrimination and exposure to different groups of people stimulate further ethnic and racial identity exploration. Adolescents negotiate, contest, and elaborate on what ethnic and racial identity means and begin to internalize cultural values. This process narrows through young adulthood.

**Sexual Identity Development**

Most research on sexual identity development has focused on LGBTQIA+ identity development, although research has suggested that a substantial proportion of exclusively heterosexual adults report having gone through a developmental period of sexual identity questioning (Morgan, 2013). Cass’s (1979) early and influential six-stage model of homosexual
identity development included stages of identity confusion, identity comparison, identity
tolerance, identity acceptance, identity pride, and identity synthesis. Friedman et al. (2008)
highlighted different sexual identity development milestones in queer adult men. In an analysis
of 1,383 gay and bisexual men in the Urban Men’s Study, they observed queer men’s identity
development to include a variety of processes in a set of ordered stages consisting of same-sex
attraction, same-sex sexual behavior, self-identification with a sexual minority label, and
disclosure to others. Friedman et al. (2008) proposed that this process was likely completed in
adulthood, rather than adolescence, due to increasing freedom from parental control.

However, the order in which these developmental processes unfold may vary. Floyd and
Bakeman (2006) interviewed a sample of 757 LGBTQ individuals about their sexual identity
development, using a semi-structured interview format that discussed seven different coming-out
experiences including: first awareness of same-sex attraction, first sexual experience with
opposite-sex partners, first sexual experience with same-sex partners, self-identification as a
sexual minority, disclosure to someone other than a parent, disclosure to their mother, and
disclosure to their father to assess the timing and sequence of these experiences. They found that
individuals who self-identify as a sexual minority in adolescence rather than adulthood
demonstrated an identity-centered sequence of experiences rather than an experience-centered
sequence. An identity-centered sequence of coming-out experiences occurs when an individual
identifies as a sexual minority prior to their first same-sex sexual experiences, whereas an
experience-centered sequencing has same-sex sexual experiences preceding self-identification.
The authors concluded that traditional stage-sequential frameworks need to expand to include
social changes and maturational factors that may affect the timing and sequence of queer sexual
identity development.
Multiple Identity Development

Intersectionality and multiple identity development are intricate, complex, and under-researched. Individuals’ intersecting identities, including their race, gender, and sexual orientation, as well as other important identities, such as religion, encapsulate a range of psychosocial influences that all influence development. Jamil et al. (2009) investigated identity development processes in a phenomenological qualitative study of 22 gay, bisexual, or sexually questioning black or Latino men, ages 16-22. One of the aims of this study was to identify key shared factors across both ethnic and sexual identity development processes. Participants were interviewed about the meaning of their identity, their self-identification, their awareness of their identity, their sense of community, and their experiences of support. For these men, the process of ethnic/racial identity involved becoming aware of their heritage and culture, whereas sexual identity involved connection to their own sexual orientation and connection to the LGBTQIA+ community. Identity development with multiple marginalized statuses is complicated when the values of the communities cause internal conflict or when discrimination and oppression for one or several identities is common.

Marginalization and Stress

When individuals experience identity-related oppression, they may be prevented from reaching their goals. Identity-related oppression is a source of psychological strain that may make delinquency and drug use more common in adolescents (Agnew & White, 1992; Button. & Worthen, 2014). Agnew’s (1992) General Strain Theory (GST) posits that sources of strain create negative affective states, which in turn lead to antisocial behavior, such as drug use, delinquency, violence, and truancy. GST argues that individuals who are faced with negative
interpersonal interactions (such as discrimination, bullying, or other forms of oppression) experience increased stress.

GST has been used to understand intersectionality and the relationship between discriminatory victimization and poor outcomes. Button and Worthen (2014) investigated differences in sexual identity, gender, and sexual behavior among lesbian, gay, bisexual, transgender, and queer high school students in Delaware (N = 539). In this sample, boys were more likely to be physically victimized or to have their property stolen by their peers than girls because of their sexual orientation, but both genders reported equal levels of drug use, poor grades, and suicidality. Girls who identified as homosexual were more likely to be victimized than bisexual or questioning girls or girls who engaged in same-sex sexual behavior (SSB) without using a sexual minority identity label for themselves. All sexual minority boys, including those who engaged in SSB without a label, reported equal levels of victimization from peers regardless of their identity. Sexual minority and SSB youth were more likely to use drugs, engage in suicidal behavior, and report poor grades. Lesbian girls reported more drug use than girls questioning their sexuality. Girls who experienced victimization reported even higher drug use when they identified as a sexual minority. Questioning youth were less likely to report poor outcomes than other sexual minority (i.e., homosexual, bisexual, and SSB) youth, and there were no racial differences in substance use for this sample. Victimization was related to higher rates of substance use and other poor outcomes in this sample, providing some evidence in support of the GST model for sexual minority youth (Agnew, 1992; Button & Worthen, 2014).

**Mental Health and Oppressed Identity Statuses**

Teens and children who hold oppressed identity statuses are at risk in general for mental health concerns, even if it is unclear whether they have been exposed to discrimination (Ttofi et
al., 2016). Most studies have found that belonging to marginalized identity groups increases the risk of mental health symptoms compared to non-marginalized groups (Batejan, Jarvi, & Swenson, 2015; Goldbach et al., 2014; Holt et al., 2015; King et al., 2008; Marshal et al, 2011; Ttofi et al., 2016). Most studies on the mental health impact of intersecting marginalized identities on children analyze their relation to depression and anxiety (Poteat, Mereish, DiGiovanni, & Koenig, 2011). For example, an investigation of the impact of intersecting identities in youth in grades 7 through 12 on the rates of suicidality, victimization, and truancy, using archival data from the Dane County (Wisconsin) Youth Assessment (Dane County Youth Commission, 2009) survey, found that BIPOC and sexual minority children had higher rates of depression, suicidality and truancy compared to White heterosexual children (Poteat, Mereish, DiGiovanni, & Koenig, 2011). Van Voorhees et al. (2008) similarly found that African-American, Hispanic, female, and low-income individuals were at higher risk for a depressive episode in adolescence when compared to their peers who identify as White, male, or middle- to upper-class. However, it is unclear which oppressed identity statuses are at the highest risk for mental health issues in adolescence.

**Sexual Orientation and Mental Health**

Teenagers and young adults who identify as lesbian, gay, or bisexual report twice as many suicide attempts compared to their straight peers (King et al., 2008). Across 28 studies, the lifetime prevalence of anxiety, depression, and substance use disorders is 1.5 times higher in lesbian, gay, and bisexual individuals (King et al., 2008). Lesbian and bisexual women are at particularly high risk for substance use disorders, whereas suicide attempts are highest in gay and bisexual men (King et al., 2008).
In a more recent meta-analysis, which was the first to compare the risk for non-suicidal self-injuries (NSSI) between sexual minority and heterosexual individuals, Batejan, Jarvi, and Swenson (2015) analyzed 15 studies that examined the association between sexual orientation and NSSI. Across studies, identifying as a sexual minority was associated with engaging in NSSI behaviors and experiencing suicidal thoughts. Gay, lesbian, and bisexual adolescents were at a significantly higher risk for engaging in NSSI compared to heterosexual and questioning youth. Marshal et al. (2011), in a meta-analysis of depression and/or suicidality among sexual minority and heterosexual young adults (ages 18-21), also found that, across 30 studies, sexual minority youth reported significantly higher rates of suicidality and depressive symptoms compared to heterosexual youth.

**Gender Identity and Mental Health**

There is less research on mental health among transgender and nonbinary adolescents compared to cisgender and gender-conforming adolescents, although teens who identified with a gender identity that is different from their gender assigned at birth reported elevated levels of suicidality and psychopathology in one study (Grossman & D’Augelli, 2007). In this study, a sample of 55 transgender adolescents were assessed using a questionnaire and structured interview about their life-threatening behaviors. Nearly half of the sample reported having thought seriously about committing suicide. Approximately 25% of the sample reported attempting suicide at least once. Grossman & D’Augelli (2007) also studied the factors related to suicidality and a transgender identity. Parental abuse and poor body image both were associated with suicidality in this sample. Participants reported being verbally abused by their parents regarding their gender expression at rates of 35% if they had not reported a history of suicide attempts and 73% if they did have a history of at least one suicide attempt. Teens who had not
attempted suicide reported physical abuse from their parents at a rate of 13%, whereas among
teens who had reported a suicide attempt, 36% reported also experiencing physical abuse from
their parents related to their gender expression. Participants who reported experiencing verbal or
physical abuse were more likely to also report a suicide attempt. Participants who reported
suicide attempts were also less satisfied with their weight and body image. The authors
concluded that the experience of identifying as a gender minority led adolescents to experience
more emotional distress, experience more abuse, and have poorer body image than their gender
majority peers.

Race and Mental Health

Racially marginalized teens also show evidence of poorer mental health relative to White
teens (Brown et al., 2007; Chesin et al., 2013). Brown, Meadows, and Elder (2007) studied the
trajectory of psychological distress and racial-ethnic inequalities from adolescence to young
adulthood. They found that symptoms increased persistently among Black men and Black,
Hispanic, and Asian-American women. Black participants reported higher levels of
psychological distress than White participants despite having a similar benefit of protective
factors such as social support (Brown et al., 2007). Chesin, Moster, and Jeglic (2013)
investigated the prevalence of NSSI and Borderline Personality Disorder among ethnically and
racially diverse emerging adults. They found that racial and ethnic minority status is not always
associated with poor mental health outcomes. For example, in the case of NSSI and Borderline
Personality Disorder, Asian and White emerging adults reported significantly higher rates of
NSSI than Hispanic and Black individuals. There was no significant difference in borderline
personality disorder rates by racial or ethnic group in the sample.
Bullying and Discrimination

Although discrimination and bullying in schools are related, they are not the same. Bullying is defined as mean-spirited actions or harassment perpetrated by peers (Gruber & Fineran, 2016). Bullying can happen for numerous reasons, some of which are discriminatory. Discriminatory bullying can be defined as a specific form of bullying that is focused on aspects of an individual’s identity (Elamé, 2013). Bullying in schools based on race, gender, and sexual orientation have all been investigated. According to Coll et al. (1996), children begin making assumptions and judgments about their peers as early as preschool. They are able to place each other in “in-groups” and “out-groups” and relate to those they find similar to themselves. This awareness of being a part of a group or being excluded or seen as different is what leads to bullying throughout the lifespan. Being a member of an “out-group” also leads to marginalization.

Discriminatory bullying has been connected to negative health outcomes and further perpetration of violence. Galán et al. (2021) examined the relationship between discriminatory bullying and health and violence outcomes. Among high school students in Pittsburgh, Pennsylvania (N = 3939), the rates of experienced discriminatory bullying and perpetration of bullying were associated with participants’ race, gender identity, and sexual orientation. Among the 3,939 participants, 38.2% reported experiencing identity-based bullying, most frequently related to their racial/ethnic identity. The authors found that Black, Hispanic, and gender diverse (transgender and nonbinary) youth were more likely to be a victim of bullying than White, cis-gendered, straight youth. Students who were both perpetrators and victims of discriminatory bullying had poorer mental health, physical health, and violence outcomes than those who did not experience discriminatory bullying. Victims of identity-based bullying were also more likely
to have gone more than 2 years without a physician well visit exam (OR=1.57), have declined recommended medical care (OR=1.70), have engaged in NSSI (OR=2.64), have reported suicidal ideation (OR=1.65), have been involved in a fight (OR=1.80), and have been a victim of sexual assault (OR=1.57).

Russell et al. (2012) assessed the prevalence of bias-based and general harassment in youth in Wisconsin and California. They found that 35.8% of children were victims of general harassment, 15.8% were victims of racial discrimination, and 15.5% were victims of sexual-orientation-based discrimination in the Dane County (Wisconsin) Youth Assessment (Dane County Youth Commission, 2012). In the California Healthy Kids Survey (Constantine & Benard, 2001), 40.3% of children experienced discriminatory harassment, 17.7% experienced racial discrimination, and 10.2% experienced sexual orientation-based bullying. Experiencing discriminatory harassment was associated with mental health concerns, substance use, truancy, and lower grades.

**Race and Bullying**

BIPOC children experience more bullying compared to White children both in the U.S. and in some other countries. For example, in a longitudinal study of 3,956 12-13-year-old Australian children, White Australian-born and White European-born children reported less physical, social, and any other type of bullying compared to children of other ethnicities. Indigenous Australian children had the highest rates of physical and social forms of bullying as well as experiences of racial discrimination in this study (Priest et al., 2016).

Similarly, Rosenbloom and Way (2004) examined experiences of discrimination among racially diverse youth (N=60) in a New York City high school. The researchers conducted semi-
structured interviews with Black, Asian, and Latinx students targeting their relationships, experiences in school and their neighborhood, and how their racial identity influenced their life. The authors found that Asian-American adolescents were more likely to perceive that they were being discriminated against by their peers than White, Latinx, and Black students. Black and Latinx students perceived discrimination from adults and authority figures more than from peers. Huynh and Fuligni (2010), on the other hand, studied the implications of discrimination among Latinx, Asian, and European 12th grade students in California (N = 601). The participants completed a questionnaire and 14 days’ worth of daily assessment in the form of a diary checklist focused on their experiences with discrimination, depressive symptoms, distress, self-esteem, physical symptoms, and academic achievement. Latinx teens in this study were more likely to experience discrimination and bullying by their peers and adults compared to Asian-American youth.

Shin et al. (2011) examined discrimination and mental health outcomes in Korean American adolescents, including the experiences of bullies, victims, and bystanders. Korean American students residing in New York and New Jersey aged 13-19 (N = 295) participated in the study. About 29% of these youth reported being bullied, 75% observed others being bullied, 32% reported bullying others, and 16% both bullied others and were bullied. Within the victim group, most bullying happened after school. Within the victim group, 29% reported they perceived they were bullied due to their country of origin, which was the most frequent reason referenced for the bullying among the victim group. There were no differences in experiences of discrimination when comparing the bullied group and the group that was not bullied. Both bullies and victims of bullies in this study reported higher levels of racial discrimination than those in other groups.
Gender and Sexual Orientation and Bullying

Discrimination and bullying based on sexual preferences and gender identity are also a source of victimization in adolescence. Lesbian, gay, and bisexual teens are more likely to experience bullying, homophobic discrimination, victimization, and violence from their peers and adults than their straight and cisgender peers (Earnshaw et al. 2016; Olsen et al. 2014). Sexual minority boys are more likely than heterosexual boys to be threatened or injured by a weapon, to refuse to go to school because of safety concerns, and to report victimization from their heterosexual peers (Olsen et al. 2014). Sexual minority girls are also more likely to be threatened or injured by a weapon, to refuse going to school due to safety concerns, and to be bullied by heterosexual peers, as well as to be involved in physical fights and to carry a weapon (Olsen et al., 2014). A 2011 study found that 82% of gay, lesbian, and bisexual youth reported experiencing verbal harassment based on their sexual orientation and about 18.3% reported being physically assaulted (Kosciw et al., 2012). Among transgender youth, 87 to 89% of students reported verbal harassment based on their gender expression and sexual orientation. More than half of these students were pushed or shoved due to their gender and gender expression, and nearly half of the transgender students were kicked, punched, or injured with a weapon. Overall, transgender students were more likely than cisgender students to be bullied (Greytak et al., 2009; Kosciw et., 2012).

Intersecting Identities and Bullying

There is evidence that youth with multiple intersecting oppressed identities experience higher rates of bullying and discrimination than youth without multiple intersecting marginalized identities (Daley, et al., 2007; Garnett et al., 2014). In the nationwide (N = 114,881), Youth Risk
Behavior Survey (Centers for Disease Control and Prevention, 2011-2017). Jackman et al. (2020) found that sexual minority youth had higher rates of bullying victimization and that overall, White youth had higher rates of bully victimization than other racial/ethnic groups. However, bisexual racial/ethnic minority girls, and all sexual and racial/ethnic minority boys, were at higher risk of bullying victimization compared to their heterosexual and same race peers.

Another study using the 2015 National Crime Victimization Survey School Crime Supplement, a yearly survey of youth aged 12-18 (N=678) from across the United States, also found that teens with multiple oppressed identities experienced higher rates of bias-based harassment and victimization (Mulvey et al., 2018). Teens with more oppressed identities who also experienced multiple forms of discrimination, including age, race, ethnicity, and gender discrimination, had poorer outcomes, including lower rates of after school activity participation, higher self-reported fear, and higher school avoidance than those who identified with fewer marginalized statuses.

Garnett et al. (2014) investigated student perceptions of their experiences of bullying and discrimination based on various social identities in the 2006 Boston Youth Survey, a large survey completed by high school students in the Boston school district. This study also investigated mental health problems among these students and found that sexual minority youth were bullied and assaulted more than straight youth. Youth who reported experiencing racial discrimination reported lower rates of bullying due to their sexual orientation and weight. Participants who endorsed racial, immigration status, and weight-based discrimination reported that they were discriminated against based on a combination of these identities. Having multiple intersecting identities also increases risk of exposure to discrimination. For example, larger-
bodied youth were more likely to be discriminated against if they were also girls and sexual minorities. Participants who reported any form of discrimination had higher rates of depressive symptoms, self-harm, and suicidal ideation than youth who reported no experiences of discrimination. Youth who experienced discrimination based on their sexual orientation or multiple intersectional identities reported significantly more self-harm and suicidal ideation than youth who had experienced low levels of discrimination.

**Discriminatory Bullying and Mental Health**

The risks for mental health problems are high for teens and children who are exposed to discrimination. Children begin to perceive personal and institutional discrimination around ages 6 to 10 (Brown & Bigler, 2005; Cooper et al., 2008; McKown, 2004). Experiences of discrimination lead to poorer mental health outcomes. Perceived discrimination and racism directly affected psychological functioning and exacerbated other stressors among African-American adolescents (Brown & Bigler, 2005). Louie (2020) investigated the associations between colorism, discrimination, and mental health among Black adolescents and found that a darker skin tone was related to increased discrimination and mental health concerns, particularly depressive symptoms. Some evidence suggests that racial discrimination against African-American adolescents is associated with lower self-esteem, increased psychological distress, depressive symptomatology, anxiety, feelings of hopelessness, and lower life satisfaction (Cooper et al, 2008). In a large study of first and second-generation immigrant adolescents in Florida and California, 55% reported personal experiences with discrimination, and those who reported discrimination reported higher levels of depressive symptoms and low self-esteem (Rumbaut, 1994).
Discrimination has been linked to health disparities and lower rates of health care utilization. Williams et al. (2019), in a review of 29 meta-analyses and literature reviews published between 2013 and 2019, used a dynamic theoretical approach to explain health disparities. They noted that multiple factors impact health care outcomes and utilization, including cultural racism, stereotypes, biases, and stigma. Cultural racism directly influences institutional racism due to racist policies and segregation. Individual-level racism can affect a person of color’s ability to maintain healthy social relationships and get their needs met (e.g., renting an apartment, applying for jobs). Individual racism has been theorized to be related to health outcomes based on behavioral, physical, psychological, and individual responses and healthcare use. Discrimination was robustly linked to adverse mental health outcomes in this review of the literature in adults, and evidence is emerging that the same may be true for adolescents.

Flores et al. (2021) investigated the relationship between discriminatory behaviors and problems with family, school, and peers, in children and adolescents in Chile. A large number of youth (N = 3,700) living in Arica, Chile, between 8 and 19 years of age, and from a variety of ethnic backgrounds, including Latin-American, Afro-descendent, and three aboriginal groups, participated in this survey of perceived discrimination, self-esteem, and ethnic identity. Perceived discrimination and ethnic identity were related to problems with family, school, peers, and self-esteem. Problems with peer relations were most directly related to perceived discrimination, meaning that the more discrimination that youth experienced the more difficulty they had in building and maintaining healthy relationships with their peers. Discrimination was also linked to higher rates of school problems and family problems.
Rosenthal et al. (2015) examined the association between health outcomes and stigma-based bullying in a 2-year longitudinal study in Connecticut middle schools. Students (N = 644) in the 5th and 6th grade in 12 Connecticut schools were surveyed, had physical measures taken, and completed a physical fitness test at baseline and then again two years later. In this study, race and weight-based bullying predicted poor health outcomes, lower self-rated health, and higher rates of emotional problems. Children’s emotional problems at time one was related to increases in systolic and diastolic blood pressure, body mass index, and poorer self-rated health in time two. For these youth, experiencing discrimination not only predicted later emotional distress, but it also predicted physical health concerns, which could affect these children’s health in both the short and long term.

**Discrimination and Mental Health Symptoms**

Fisher, Wallace, and Fenton (2000) investigated the effects of racial bias on psychological distress in adolescents from a variety of different racial and ethnic backgrounds. The authors administered The Adolescent Discrimination Distress Index (Fisher et al., 2010) and self-esteem measures to 177 high school students who identified as African-American, East Asian, South Asian, Hispanic, and non-Hispanic White. Students from all the race and ethnic groups, including White students, studied reported racial prejudice in educational settings. Institutional discrimination in stores and by police was reported at higher rates among older youth who were African-American and Hispanic compared to younger youth from other racial or ethnic backgrounds. There was also a significant association between perceived racial discrimination and low self-esteem.

Szalacha et al. (2003) investigated perceived discrimination and mental health among Puerto Rican children and adolescents (N = 291) living in the mainland United States whose
parents were born in Puerto Rico. Children (M = 8.75 years old) in this sample relatively rarely perceived discrimination, whereas nearly half of the adolescents (M = 13.5 years old) perceived racial/ethnic discrimination. Both groups, however, scored high on indicators of poor mental health, including depression, low self-esteem, school stress, and poor behavioral adjustment. Both anxiety about experiencing discrimination and perceived discrimination were associated with lower self-esteem and higher rates of depression and stress among the Puerto Rican children and adolescents in this sample.

Similarly, among a sample of adolescent Somali refugees (N = 135) between the ages of 11 and 20 (M = 15), who completed focus groups and qualitative interviews in a mixed methods study, experiencing racial and ethnic discrimination was associated with poorer mental health for both boys and girls. For both boys and girls, discrimination was associated with higher rates of PTSD. However, Somali acculturation (i.e., incorporating values, beliefs, and customs of the Somali culture) was associated with better mental health outcomes for girls, whereas American acculturation (i.e., adopting American customs, beliefs, and values) was associated with better mental health for boys compared to girls (Ellis et al., 2010). Grossman and Liang (2008) also found a positive relationship between distress from discrimination and depression in a sample of Chinese-American adolescents (N = 158) in 5th and 8th grades.

Thus, across diverse samples of adolescents from racially or ethnically marginalized groups in the U.S., experiencing racial or ethnic discrimination is associated with poorer mental health outcomes. Overall, discrimination leads to a multitude of mental and physical health problems that can have long-lasting effects on a child’s development. Although positive peer and familial relationships and interactions, along with a sense of belonging, can counteract some of
the negative impacts of discrimination, direct exposure to discrimination remains oppressive, and leads to mental health problems.

**Intersectional Identity and Discrimination**

Holding multiple marginalized identities can lead to social exclusion from other communities to which individuals belong. For example, exposure to homophobic behavior may delay or alter healthy ethnic identity development (Barnes & Meyer, 2012; Choi et al., 2011; Jamil et al., 2009). BIPOC queer individuals may experience racism from the LGBTQIA+ community, which prevents inclusion in that community (Ward, 2008). Racial stereotypes and sexual objectification based on race are common in LGBTQIA+ communities as in other communities affected by White supremacy. Black individuals may be stereotyped as aggressive, Latinx individuals as passionate and sensual, and Asian individuals as boring in LGBTQIA+ communities and among LGBTQIA+ people as in non-queer communities (Wilson et al., 2009).

Individuals who identify with multiple marginalized identities therefore experience a complex system of discrimination. According to General Strain Theory (Agnew, 1992), the additive effects of holding multiple oppressed identities can lead to higher levels of strain. Vargas et al. (2020), in a critical review of the relationship between intersectional discrimination and mental health symptoms, found that experiencing multiple types of discrimination leads to several negative mental health outcomes, especially depression. Both heterosexism and racism predicted symptoms of depression, anxiety, posttraumatic stress disorder, and substance use across included studies. However, heterosexism predicted suicidality across studies, whereas racism did not.
The effects of experiencing multiple types of discrimination on mental health concerns may also occur when not only race or ethnicity is marginalized, but also immigration status and religion. For example, Giuliani et al. (2018) investigated the psychological well-being of 204 first- and second-generation Muslim immigrants, primarily from Egypt and Morocco, currently living in Italy. They found that discrimination had a moderate negative effect on first-generation and second-generation Muslims immigrants’ psychological well-being, and that participants who experienced more discrimination and higher levels of depression did not identify as strongly with their nationality, religion, or ethnicity.

Multiple disadvantaged groups face greater exposure to discrimination, which leads to poorer mental and physical health. In a sample of Black and Latinx youth assessed using the Black Youth Culture Survey (N=1,052), Grollman (2012) found that Black and Latinx youth experienced significant levels of racial discrimination; girls experienced significant levels of gender discrimination; and sexual minorities experienced significant levels of sexual identity discrimination. They also found that there was a dose-effect relationship between the number of disadvantaged identities and the levels and frequency of discrimination that individuals experience, such that the more marginalized identities youth held, the more frequently they experienced discrimination. More disadvantaged identities and more frequent experiences of discrimination were also associated with higher rates of depression and lower self-rated health.

**Risk Behaviors in Adolescence**

Substance use generally decreases the overall well-being of adolescents and is hazardous to their physical and mental health (Case et al., 2016; Ttofi et al., 2016). Tobacco (including vaping and cigarettes) and alcohol are the most frequently used substances among American
adolescents as well. Experimenting with these substances prior to age 16 is associated with later increased use behaviors as well as later poly-substance use. Using substances in adolescence also is associated with having a substance use disorder in adulthood (Moss, Chen & Yi, 2014).

Minnesota students appear to use substances at somewhat lower rates than students nationwide. About 12% of Minnesota high school students reported using tobacco products (most commonly e-cigarettes), and about 16% reported drinking alcohol at least once in the past year. About 1-2% reporting use of other illicit drugs (2019 Minnesota Student Survey Statewide Tables, 2019). These findings are higher compared to estimates obtained for Minnesota teens from the National Survey of Drug Use and Health, and generally lower than use reported by teens nationwide (National Survey on Drug Use and Health, 2023). However, cannabis use was estimated to be approximately 12-13% both nationally and in Minnesota according to the NSDUH and 8% according to the MSS (2019 Minnesota Student Survey Statewide Tables, 2019; National Survey on Drug Use and Health, 2023). Prevalence estimates for substance use in Minnesota teens in the NSDUH study are modestly but consistently lower than those derived from the MSS. This may be because the NSDUH uses a sample of younger adolescents than the MSS. Also, the MSS used a larger sample size of Minnesota teens.

**Marginalization and Substance Use**

In an investigation of tobacco use prevalence in U.S. high school students, using the 2013 Youth Risk Behavior Survey (YRBS; N = 13,583), Case et al.(2016) found that boys had a higher prevalence of tobacco use than girls, with 27% and 17.7% tobacco product use respectively. White and Hispanic youth used tobacco at higher rates than Black youth.
Black and Hispanic teens in one study were more likely to use alcohol, but were not more likely to use marijuana, when compared to White teens (Steele, 2016). Boys and those with lower income used more marijuana than girls and those with medium and high income. However, Steele (2016) found that fear of using substances influenced the relationship between race, marginalization, and substance use. Experiencing discrimination, witnessing violence, having peers who used substances, being Hispanic, and experiencing bullying were all related to higher levels of fear of substance use in this study. This higher level of fear of substance use was then associated with decreased rates of substance use. In the Hispanic teen groups, marijuana use, higher rates of depression, and physical victimization were associated with increased substance use. There were no significant differences in the relationship between marginalization and substance use in other racial groups. The researchers concluded that Black and Hispanic teens were more likely to drink alcohol, but not more likely to use marijuana. Hispanic teens were at increased risk to use substances, be discriminated against, and experience depression than White peers.

Unger (2015) concluded, in a review of the epidemiology and etiology of substance use in immigrant and marginalized groups, that Hispanic youth had the highest rates of substance use compared to other racial and ethnic groups in the United States, which may be due to cultural and economic stresses related to systematic discrimination. She highlighted that the current interventions for substance use do not address cultural concerns and discrimination, which leaves this population underserved. Unger (2015) suggested that incorporating these factors into interventions may begin to bridge this gap. Other research also suggests that marginalization may impact substance use among people who hold a racially or ethnically marginalized identity. Substance use among Asian-American adolescents was analyzed using data from the wave 1 in-
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home sample of the National Longitudinal Study of Adolescent Health, with a sample size of 20,745 of youth in grades 7-12 (Thai, Connell & Tebes, 2010). This study found that although Asian-American students were not more likely to use than other marginalized adolescents, acculturation and peer substance use were significant risk factors for alcohol, tobacco, and cannabis use among this group.

In terms of gender and sexual minority status, approximately 11.5% of adolescents identify as a gender minority, according to Reisner, Greytak, Parsons, and Ybarra’s (2015) study. Identifying as a gender minority was associated with increased substance use including use of alcohol, marijuana, and other illicit substances. Experiencing bullying and discriminatory victimization increased the odds of gender minority youth engaging in substance use (Reisner et al., 2015). Interpersonal victimization was also the most significant risk factor for substance use among lesbian, gay, and bisexual (LGB) adolescents in a different study (Goldbach et al., 2014).

If LGB adolescents received negative reactions when they disclosed their sexual orientation from peers and family members, such as rejection, harassment, or being asked to leave the family home, these experiences were also a risk factor for substance use (Goldbach et al., 2014).

Bullying and Risk Behaviors

Exposure to bullying increases the probability that adolescents will engage in substance use (Holt, 2015). Bullying is directly and/or indirectly associated with using substances, including tobacco, alcohol, marijuana, prescription, and illicit substances. Hertz et al. (2015) used the 2011 Youth Risk Behavior Survey (Centers for Disease Control, 2011) to investigate the association between bullying victimization and health risk behaviors including substance use. Teens in grades 9-12 who reported in-person or electronic bullying were included in this study.
In this study, exposure to bullying increased the probability that adolescents would engage in substance use. Steele et al. (2016) also found that physical victimization was related to higher rates of alcohol and marijuana use among teens in a Chicago high school. Also, in an international study, including youth participants from China, Guyana, Jordan, Kenya, the Philippines, Swaziland, Uganda, Venezuela and Zimbabwe, being frequently bullied in the past 30 days and being a victim of violence or injury from bullying in the past 12 months were each associated with smoking and alcohol use (Turagabeci et al., 2008).

The Growing Up Today Study (GUTS) in the United States (Berlan et al., 2010) investigated a similar relationship between sexual orientation and bullying victimization among youth ages 14-22 who identified with various sexual orientations. Girls and young women who were “mostly” heterosexual and/or bisexual were at higher risk for both being a bully and being a victim of bullying compared to solely heterosexual girls and women. Lesbian girls and young women were also more likely to report bullying victimization than heterosexual girls and women. Among men and boys, mostly heterosexual, bisexual, and gay individuals were at higher risk to be a victim of bullying compared to solely heterosexual young men and boys. Gay boys and young men were less likely to bully others than heterosexual boys and young men.

Cyberbullying has also been associated with future substance use. Both cyberbullying and interpersonal victimization were associated with higher rates of delinquent behavior and substance use in one study (Mitchell et al., 2007). In fact, youth who were cyberbullied were twice as likely to report substance use compared to youth who did not report experiencing cyberbullying in this study. Bullying does not only affect high school students. Tharp-Taylor, Haviland, and D’Amico (2009) indicated that bullying victimization may increase substance use even in younger adolescents. Mental and physical bullying was associated with the use of
alcohol, cigarettes, marijuana, and inhalants in middle school students aged 11 to 14. However, some studies do not find that victimization of bullying leads to higher rates of substance use, especially among very young children. Niemelä et al. (2011), for example, compared bullying behaviors and substance use in Finnish boys at age 8 and 18 (N=2,946) and found that boys who were bullied the most frequently at age 8 had the lowest amount of substance use at age 18. Binge drinking and illicit substance use were also lower among victims of bullying in several studies, perhaps because bully victims have less peer support and may have fewer opportunities for social substance use in adolescence (Desousa et al., 2008; Hazemba et al., 2008; Liang et al., 2007). Whereas a few studies found that being a victim of bullying was associated with lower rates of substance use, most studies suggest that substance use is more likely when teens are exposed to bullying.

**Intersecting Identities and Risk Behavior**

Substance use rates are higher among youth with multiple intersecting marginalized identities, compared to youth who have predominately majority-status identities (Button & Worthen 2014; Hatchel & Marx, 2018). Gattamorta, Salerno, & Castro (2019) investigated risk behaviors in youth in the United States based on race and sexual minority status (including gay, lesbian, bisexual, and questioning youth), using a nationally representative sample of youth (N = 15,624) in grades 9-12. There were some racial differences in substance use among sexual minority youth. Hispanic sexual minority youth had higher rates of tobacco and alcohol use compared to Black and Asian-American sexual minority youth. Hispanic and Black sexual minority youth had higher rates of marijuana and other illicit substance use when compared to Asian-American sexual minority youth. There were also racial differences by gender; White sexual minority girls used alcohol more than Hispanic and Black heterosexual girls. All groups
of sexual minority girls used marijuana more than sexual minority boys. Marshal et al. (2013) also found that African-American girls who were sexual minorities had greater substance use than straight Black girls, and that this difference was bigger than the difference between White sexual minority girls and White straight girls. At the same time, African-American heterosexual girls had higher rates of substance use compared to their White counterparts. African-American sexual minority girls also had higher rates of substance use than White girls who identified as a sexual minority. Identifying as a sexual minority was related to higher rates of substance use than heterosexuality in all racial groups but having multiple marginalized identities was associated with even greater increases in substance use rates.

Some theorists suggest that transgender youth of color may be at the highest risk for substance use compared to White cisgender youth (Singh, 2013). In a qualitative study of 13 transgender youth of color in a large southeastern city in the U.S., participants described how social stigma and lack of education around differences in gender on top of racial discrimination left them with a unique set of interpersonal and environmental stressors. These stressors may be a factor in increased substance use among transgender BIPOC teens.

Not all studies that investigate intersectionality find that having more than one marginalized identity puts an individual at a higher risk for substance use compared to those who identify with only one marginalized status, although even one marginalized status is often associated with increased risk relative to straight White cisgendered boys who hold majority statuses in all of these areas of their identity. Demant et al. (2018) found that identifying as both an ethnic minority and a sexual minority was a protective factor for substance use compared to identifying either with an ethnic minority or sexual minority status but not both. The authors used the 2015 Global Drug Survey with a large sample size (N=90,941). However, both
individuals with multiple marginalized identities and those with only one marginalized identity were more likely than straight, cis, White individuals to use substances (Demant et al., 2018). Hotton et al. (2013) found that there were no differences in rates of substance use in BIPOC transgender girls compared to White transgender girls. However, transgender youth of color did engage in higher rates of risky sexual behaviors (Hotton et al., 2013). Newcomb et al. (2014) studied racially diverse LGBT youth in a longitudinal study. They found that there were no differences in cigarette use in LGBT youth of color compared to LGBT White youth. These results suggest that some identities by themselves may be protective, whereas when combined with other identities, they may increase risk. Additionally, some identity statuses may be more marginalized than others.

**Intersecting Identities, Discrimination, and Substance Use in Adolescents**

There is evidence that youth with multiple oppressed identities experience higher rates of bullying and discrimination than youth without multiple intersecting marginalized identities (Daley, et al., 2007; Garnett et al., 2014), and that these higher rates of experiencing bullying and discrimination may in turn relate to substance use. A study using cross-sectional data from the 2013 and 2015 California Healthy Kids Survey (Constantine & Benard, 2001) investigated peer victimization and drug use among transgender students, youth of color, and youth of varying socioeconomic class (Hatchel & Marx, 2018) This study found that transgender participants who were in a lower socioeconomic class typically engaged in more substance use and experienced more peer victimization than middle- and upper-class participants. However, transgender youth of color were not at increased risk of victimization, nor did they engage in more drug use, than White transgender youth. (Hatchel & Marx, 2018). Bucchianeri and colleagues (2014) also studied the impact of experiencing multiple discriminatory forms of harassment including
weight-based, class-based, sexual harassment, and race-based verbal harassment in 2,793 Minnesota teens. They found that increases in the number of forms of discriminatory verbal harassment youth experienced was associated with higher rates of tobacco, alcohol, and marijuana use.

Some studies have found mixed results for the relationship between intersecting oppressed identities, bullying, and substance use. For example, Newcomb, Heinz, and Mustanski (2012) found that some marginalized statuses led youth to cope with harassment and bullying through substance use, and others did not. Specifically, they found that African-American LBGT youth were at lower risk for substance use compared to other racial groups, including Whites, perhaps because a majority of the African-American youth studied were younger than the other racial groups. Hatchel et al. (2019) also did not find that discrimination impacted the rates of substance use among transgender BIPOC youth in their sample. Transgender youth of color were not more likely than transgender White youth to engage in substance use. Having a strong ethnic and religious identity, and cross-ethnic friendships may be protective factors for the impact of discrimination in adolescence (Bhui, et al. 2017; Hunter et al. 2010;).

Eisenberg et al. (2016) found that attending schools with diverse student bodies, with greater numbers of LGBT and larger-bodied classmates, was protective for their participants who had experienced multiple types of discrimination, in terms of attenuating the relationship between this discrimination and negative behaviors such as substance use. Students in diverse schools may experience less discrimination and, in turn, use substances to cope with distress less often (Eisenberg et al., 2016). These studies suggest that there are specific protective factors that may prevent discrimination or attenuate its effects for teens with multiple marginalized
identities, including having strong and healthy identity development and growing in a diverse, multicultural context with a diverse group of classmates.

**The Current Study**

This study investigated the combined effects of discrimination and holding multiple marginalized identities on substance use among Minnesota youth. I hypothesized that (1) youth who are members of more marginalized identity groups would experience higher rates of discrimination than youth with fewer marginalized identities, (2) youth with more intersecting marginalized identities would engage in more substance use than youth with fewer marginalized identities, and (3) the relationship between multiple intersecting oppressed identity statuses and substance use would be mediated by greater perceived discrimination among students with more oppressed identity statuses.

**The Minnesota Student Survey**

The Minnesota Student Survey (MSS) has been widely used to examine the experiences and outcomes of adolescents in Minnesota high schools (Minnesota Student Survey Interagency Team, 2019). Several studies have used the MSS to investigate issues of importance to marginalized Minnesota youth, including discriminatory bullying and substance use. For example, Eisenberg et al. (2019) used the 2019 MSS to assess intersections between sexual orientation and gender expression and bullying. They found that individuals who identified as LGBTQ and transgender were more likely to be bullied and experience emotional distress, and experienced higher rates of distress than their heterosexual and cisgendered peers. Similar results were found in the 2016 Minnesota Student Survey. Teens surveyed that year (N=81,885) who were both LGB and non-binary or transgender reported being more likely to be harassed due to their gender expression and sexual orientation than those who identified as only LGB or
transgender. They also experienced more relational and physical bullying. The rates of bullying were higher among younger participants and individuals who had more than one sexual or gender minority status than among those who were not a sexual or gender minority (Eisenberg et al., 2019). Although this study assessed the effects of gender and sexual orientation, it did not investigate the intersection between race, gender, and sexual orientation as it impacted bullying. In the current study, multiple intersecting identities, including race, were investigated for their relationships with discrimination and substance use.

Similarly, Chavez et al. (2019) used data from the 2016 MSS to assess the intersections of race and gender expression on bullying, and found that Asian-Pacific Islander, Latinx, Somali, and Hmong boys who were perceived as feminine or presented as a female were more likely to be bullied than masculine-presenting boys. Chavez et al. (2019) assessed discriminatory bullying by dichotomizing victims of discriminatory bullying into those who did and did not endorse experiencing discriminatory bullying based on sexual orientation and gender identity. They found that Asian and Pacific Islander, Black, and multi-racial students were six times more likely to be bullied because of their race or ethnicity than White students. At the same time, they found that cisgender female, non-cisgender male, non-cisgender female, and non-binary students were more likely to be bullied because of their gender expression than cisgender males. However, Chavez et al., (2019) did not investigate the relationship between intersecting oppressed identity statuses, bullying, and risk of substance use.

Jenson (2018) used the 2016 MSS to investigate the association between various demographic factors and tobacco use. This study found that American Indian, bisexual, and low-income individuals were more likely to use tobacco products compared to non-racially, sexually, or economically marginalized identities. However, these authors investigated only tobacco use,
not other substances, and did not investigate intersectionality or how multiple marginalized identities might combine to affect risk.

Gower (2018) used the 2016 MSS to assess how various interpersonal and organizational protective factors are related to depression, suicidality, and substance use in transgender youth. The interpersonal and organizational protective factors that they were interested in included connectedness to parents, adult relatives, friends, community adults, and teachers, as well as, youth development opportunities, community and school safety. Gower (2018) found that these factors decreased risk for transgender youth, and that connectedness to teachers specifically buffered against risk of substance use. However, Gower (2018) did not investigate the role of intersecting marginalized identities, nor did they investigate the role of bullying or negative experiences students might experience.

**Research Rationale**

Teens and children are at increased risk for mental health problems and difficulties with identity development, especially if they are exposed to discrimination and if they hold marginalized identity statuses (Mereish & Bradford, 2014). Most studies on the impact of intersecting marginalized identities on adolescents analyze their relation to depression and anxiety (Ttofi et al., 2016). However, studies also suggest that substance use generally decreases the overall well-being of students and is hazardous to their physical and mental health (Case et al., 2016; Juvonen & Graham, 2014; Swearer & Hymel, 2015; Ttofi et al., 2016). Hertz, Everett-Jones, Barrios, David-Ferdon and Holt (2015) found that exposure to bullying increased the probability that adolescents would engage in substance use. Research also suggests that substance use rates are higher when youth hold more intersecting marginalized identities.
compared to youth who belong to predominately majority-status identities (Button & Worthen 2014; Hatchel & Marx, 2018).

Bullying in schools based on race, gender, and sexual orientation has historically been investigated with each aspect of identity in isolation, but more recent research has explored the effects of intersecting identities in youth (Garnett et al., 2014). Youth with multiple oppressed identities experience higher rates of bullying and discrimination than youth without multiple intersecting marginalized identities (Daley, et al., 2007; Garnett et al., 2014). However, current research on intersectionality is heavily focused on adult experiences rather than the experiences of adolescents. Also, few studies investigate the relationships between intersectionality, discrimination, and substance use in youth.

Individuals who are exposed to discrimination and oppression are at an increased risk for poor outcomes including substance use, and these effects may be stronger for individuals with multiple intersecting marginalized identities. The aim of this study was to identify how holding multiple intersecting marginalized identities relates to experiences of discrimination and substance use in Minnesota youth. This study tested three hypotheses:

**Hypothesis #1:** Youth who are members of more marginalized identity groups will experience higher rates of discrimination than youth with fewer marginalized identities. Support for this hypothesis comes from previous studies of youth that find that having certain marginalized identities is related to experiencing higher rates of discrimination and bullying (Daley et al., 2007; Eisenberg et al., 2019; Garnett et al., 2014).

**Hypothesis #2:** Youth with more intersecting marginalized identities will engage in more substance use than youth with fewer marginalized identities. Support for this hypothesis comes from previous studies which found that youth who identify with multiple intersecting
marginalized identities are at higher risk for substance use than youth who identify with fewer marginalized identities (Balsam et al., 2004; Gattamorta, Salerno, & Castro, 2019).

**Hypotheses #3:** The relationship between multiple intersecting oppressed identity statuses and substance use will be mediated by greater perceived discrimination among students with more oppressed identity statuses. Support for this hypothesis comes from General Strain Theory (Agnew, 1992), which suggests that identifying with multiple marginalized identities in combination with experiencing discrimination should lead to a higher risk of negative coping mechanisms such as substance use.
Chapter 3: Methods

This study was a secondary analysis of data from the 2019 Minnesota Student Survey (MSS), a statewide survey of students in the 5th, 8th, 9th, and 11th grades. All public-school districts in Minnesota were invited to take part in this survey, and 81% chose to participate. Participation was voluntary on all levels; districts, schools, parents, and students could all choose to opt out. All grade levels of the 2019 MSS were administered online on a desktop computer, laptop, tablet, or netbook; 170,128 students participated.

Participants

Fifth and eighth grade students (n = 89,672) were excluded from this study because they were not asked to take all of the demographic or substance-use-related items of interest to this study. Demographic data was collected based on self-report, including gender assigned at birth, age, race, ethnicity; sexual orientation; and gender identity. Therefore, the sample for this study included 80,456 Minnesota students in 9th and 11th grades.

Procedures

The MSS is a statewide school-based census-like survey administered every three years starting in 1989. This survey is a collaboration between local schools and the Minnesota Departments of Education, Health, Human Services, and Public Safety. These state agencies developed the survey content, analyzed data, monitored data quality, and reported results (Minnesota Student Survey Interagency Team, 2019). Schools administer the survey to their 5th, 8th, 9th and 11th grade students. The online survey met federal and state accessibility requirements and included a text-to-speech option. A passive consent procedure was used by sending a letter home with students to parents (or guardians) that described the questionnaire and directed
parents that unless they contacted the school to exclude their child from the survey, the student would be asked to complete the survey (Minnesota Student Survey Interagency Team, 2019).

The 2019 version of the MSS contained 126 items (Minnesota Student Survey Interagency Team, 2019). Content domains included demographics, school problems, school violence/safety, activities, health, mental health, nutrition, family relationships, emotional distress, suicidal behavior, antisocial behaviors, family alcohol/drug problems, physical/sexual abuse, gambling behavior, communication with parents, alcohol/drug and tobacco use behaviors, sources of alcohol/drugs/tobacco, substance use diagnostic criteria, sexual behavior, dating violence, and pregnancy. At the time of administration, students were instructed that their participation was voluntary, they did not have to complete the survey, they could quit at any time, and they could skip items if they chose. Students were assured of the anonymity and confidentiality of their responses on the MSS (Minnesota Student Survey Interagency Team, 2019).

The MSS dataset provided to researchers for secondary analyses, including this one, is cleaned by survey administrators prior to release in a variety of ways. Survey responses were removed from the dataset when MSS administrators considered that student survey “responses were highly inconsistent, when there was a pattern of likely exaggeration, or when the survey was clearly a test of the online system” (2019 Minnesota Student Survey Statewide Tables, 2019, p. 5).

The 2019 MSS was chosen for this study because it is a large, state-wide sample of students and their experiences. The survey has a variety of questions to evaluate social, psychological, educational, and physical health, including multiple questions about demographic identity, substance use, and bullying, all of which were of interest in this study.
Measures

Constructs assessed in this study included intersectional identity, perceived discrimination, and substance use. Scales were constructed to measure each construct using 2019 MSS items.

Intersectional Identity

Intersectionality was assessed by designating participant demographic responses as either marginalized or non-marginalized in the areas of gender and gender identity, race, and sexual orientation. Table 1 displays the intersectional identity scale developed for this study using MSS items. In this study, participants who identify their “biological sex” as female were considered to hold a marginalized identity status with respect to sex, whereas those who identify their assigned sex as male were not. Participants who identified themselves as being any race other than White or as being multiracial were considered to have a marginalized identity status for race. Participants who identified themselves as any sexual orientation other than heterosexual or straight were considered to have a marginalized identity status in the area of sexual orientation. Participants who answered the item related to sexual orientation as “I don't describe myself in any of these ways,” “I am not sure what this question means,” or who did not answer the question were not included in analyses of sexual orientation. Participants who responded to the item “Are you transgender, genderqueer, or genderfluid?” as Yes were considered to have a marginalized status for gender identity. Participants who answered, “I am not sure about my gender identity,” or “I am not sure what this question means,” or who did not answer the question were not included in analyses of gender identity.
Table 1

*Minnesota Student Survey Items Used to Create a Scale of Intersecting Identities.*

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is your biological sex?</strong></td>
<td>Male = 0</td>
</tr>
<tr>
<td></td>
<td>Female = 1</td>
</tr>
<tr>
<td><strong>How do you describe yourself?</strong></td>
<td>White only = 0</td>
</tr>
<tr>
<td><em>(Mark ALL that apply)</em></td>
<td>Asian or Asian American = 1</td>
</tr>
<tr>
<td></td>
<td>Black, African or African American = 1</td>
</tr>
<tr>
<td></td>
<td>Hispanic or Latino/a = 1</td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian or Other Pacific Islander = 1</td>
</tr>
<tr>
<td></td>
<td>American Indian or Alaskan Native = 1</td>
</tr>
<tr>
<td></td>
<td>Participant endorsed more than one option = 1</td>
</tr>
<tr>
<td><strong>How do you describe yourself?</strong></td>
<td>Heterosexual (straight) = 0</td>
</tr>
<tr>
<td></td>
<td>Bisexual = 1</td>
</tr>
<tr>
<td></td>
<td>Gay or lesbian = 1</td>
</tr>
<tr>
<td></td>
<td>Questioning/not sure = 1</td>
</tr>
<tr>
<td></td>
<td>Pansexual = 1</td>
</tr>
<tr>
<td></td>
<td>Queer = 1</td>
</tr>
<tr>
<td></td>
<td>I don’t describe myself in any of these ways = excluded</td>
</tr>
<tr>
<td></td>
<td>I am not sure what this question means = excluded</td>
</tr>
<tr>
<td><strong>Are you transgender, genderqueer, or genderfluid?</strong></td>
<td>No = 0</td>
</tr>
<tr>
<td></td>
<td>Yes = 1</td>
</tr>
<tr>
<td></td>
<td>I am not sure about my gender identity = excluded</td>
</tr>
<tr>
<td></td>
<td>I am not sure what this question means = excluded</td>
</tr>
</tbody>
</table>

Each marginalized status a participant holds on any of these dimensions of identity was coded as one point, with non-marginalized statuses being coded as 0 points. Participants who did not answer or gave one of the excluded answers were excluded from the analyses. A scale was created by adding together the number of marginalized identities to assess the participant’s
number of intersecting identities. Scores ranged from 0; meaning this participant did not identify with a marginalized status in the areas of gender, gender identity, sexual orientation, or race; to a 4 meaning they identified as marginalized in all four areas.

Eisenberg et al. (2019) used the same MSS items to assess gender identity and sexual orientation and found that intersecting marginalized identities were associated with increased exposure to bullying and emotional distress, suggesting criterion-related validity for those two items; however, Eisenberg et al. (2019) did not investigate race and sex, and did not use these items to create a scale of intersecting marginalized identities. Chavez et al. (2019) used these items for race and gender identity and found that both marginalized race and gender identity were associated with experiences of bullying, suggesting criterion-related validity for these items as an index of marginalization; however, Chavez et al. (2019) also did not investigate sex or sexual orientation, nor did this study create a scale of intersecting marginalization as in the current study.

**Discrimination**

Discrimination was assessed by identifying the frequency of other students harassing or bullying participants for a reason related to a marginalized identity (race, ethnicity, or national origin; sexual orientation; and gender). Table 2 displays the items used to assess discrimination. The response options for these items used a Likert-type scale ranging from 1-5 based on how often the participant was victimized over the past 30 days: never, once or twice, about once a week, several times a week, or everyday. Higher scores indicated more frequent discriminatory bullying. These items were used to create a scale evaluating how frequently the participant experienced discriminatory bullying. A participant who scored a 1 would be one who did not identify any bullying in the past 30 days related to any of the areas of identity referenced in the
items. A participant who scored a 2 endorsed bullying on average once or twice in a 30-day period related to areas of their identity. Participants who scored a 3 reported bullying based on their identity on average about once a week. Students who scored a 4 reported bullying based on their identity several times a week on average. A participant who scored a 5 endorsed being bullied everyday based on all areas of their identity. Scores for the three items displayed in Table 2 were totaled, and a mean was computed, to create the discrimination scale.

**Table 2**

*Minnesota Student Survey Items Used to Measure Discrimination.*

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Your race, ethnicity or national origin</strong></td>
<td>Never = 1</td>
</tr>
<tr>
<td></td>
<td>Once or Twice = 2</td>
</tr>
<tr>
<td></td>
<td>About once a Week = 3</td>
</tr>
<tr>
<td></td>
<td>Several times a week = 4</td>
</tr>
<tr>
<td></td>
<td>Every day = 5</td>
</tr>
<tr>
<td><strong>Your gender (being male, female, transgender, etc.)</strong></td>
<td>Never = 1</td>
</tr>
<tr>
<td></td>
<td>Once or Twice = 2</td>
</tr>
<tr>
<td></td>
<td>About once a week = 3</td>
</tr>
<tr>
<td></td>
<td>Several times a week = 4</td>
</tr>
<tr>
<td></td>
<td>Every day = 5</td>
</tr>
<tr>
<td><strong>Because you are gay, lesbian, or bisexual or because someone thought you were</strong></td>
<td>Never = 1</td>
</tr>
<tr>
<td></td>
<td>Once or Twice = 2</td>
</tr>
<tr>
<td></td>
<td>About once a week = 3</td>
</tr>
<tr>
<td></td>
<td>Several times a week = 4</td>
</tr>
<tr>
<td></td>
<td>Every day = 5</td>
</tr>
</tbody>
</table>

Chavez et al. (2019) used the items in Table 2 related to being bullied for “race, ethnicity or national origin” and “your gender” and found a relationship between these items and
marginalized identity status, suggesting criterion-related validity for these items. Specifically, they found that the likelihood of being bullied because of race/ethnicity or gender identity was reduced as community, family, and teacher support increased. All racial and ethnic minority students were more likely to be bullied than White students; in fact, they were six times more likely to be bullied because of their race or ethnicity. Cisgender female students, as well as students who said others would describe themselves as having feminine expression compared to masculine expression were less likely to be bullied due to their race or ethnicity particularly when they were students of color. However, cisgender female, non-cisgender male, and non-cisgender female students were more likely to be bullied than cisgender males. Additionally, non-binary students were twice as likely to be harassed or bullied than their masculine-expressing peers. Native American and multi-racial students were more likely to be bullied because of gender expression than their White peers.

**Substance Use**

Substance use was assessed with a scale designed for this study. Twenty-five items in the 2019 MSS ask participants if they have used a variety of substances. Table 3 displays these items, which were used to create a substance use scale for this study. For each substance, participants were asked how often they engaged in its use in the past 30 days or 12 months, depending on the substance. Tobacco, alcohol, marijuana, and prescription use items were scored using a Likert-type scale for frequency ranging from 1 meaning the participant denied engaging in any use of that substance, to 6 meaning they used all 30 days. Other substances assess the number of occasions that participants used the substances in the last 12 months, ranging from 1, meaning the participant did not use on any occasion in the past 12 months, to 7, meaning they
used more than 20 times in the past twelve months. Items assess use of various types of tobacco, alcohol, and a variety of prescription and illegal drugs that are frequently abused.

### Table 3

*2019 Minnesota Student Survey Items Used to Measure Substance Use.*

<table>
<thead>
<tr>
<th>Item</th>
<th>MSS Coding</th>
<th>Study Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>...smoke a cigarette?</em></td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
</tr>
<tr>
<td><em>...smoke cigars, cigarillos or little cigars?</em></td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
</tr>
<tr>
<td><em>...use chewing tobacco, snuff or dip?</em></td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
</tr>
<tr>
<td><em>...vape or use an e-cigarette like JUUL, suorin, blu, VUSE, or logic?</em></td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
</tr>
<tr>
<td><em>...use a hookah or a waterpipe to smoke tobacco?</em></td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
<td>0 days = 1, 1 to 2 days = 2, 3 to 9 days = 3, 10 to 19 days = 4, 20 to 29 days = 5, All 30 days = 6</td>
</tr>
</tbody>
</table>
**During the last 30 days, on how many days did you drink one or more drinks of an alcoholic beverage?**

- 0 days = 1
- 1 to 2 days = 2
- 3 to 5 days = 3
- 6 to 9 days = 4
- 10 to 19 days = 5
- 20 to 29 days = 6
- All 30 days = 7

**During the past 30 days, on how many days did you have 4 or more drinks of alcohol in a row, that is, within a couple of hours?**

- 0 days = 1
- 1 day = 2
- 2 days = 3
- 3 to 5 days = 4
- 6 to 9 days = 5
- 10 to 19 days = 6
- 20 or more days = 7

**During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?**

- 0 days = 1
- 1 day = 2
- 2 days = 3
- 3 to 5 days = 4
- 6 to 9 days = 5
- 10 to 19 days = 6
- 20 or more days = 7

**During the last 30 days, on how many days did you use marijuana or hashish? (Do NOT count medical marijuana prescribed for you by a doctor)**

- 0 days = 1
- 1 day = 2
- 2 days = 3
- 3 to 5 days = 4
- 6 to 9 days = 5
- 10 to 19 days = 6
- 20 or more days = 7

**During the last 30 days, on how many days did you use prescription drugs without a doctor’s prescription or differently than how a doctor told you to use it?**

- 0 days = 1
- 1 to 2 days = 2
- 3 to 5 days = 3
- 6 to 9 days = 4
- 10 to 19 days = 5
- 20 to 29 days = 6
- All 30 days = 7
**During the last 12 months, on how many occasions (if any) have you had alcoholic beverages to drink?**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1 to 2</td>
<td>1</td>
</tr>
<tr>
<td>3 to 5</td>
<td>2</td>
</tr>
<tr>
<td>6 to 9</td>
<td>3</td>
</tr>
<tr>
<td>10 to 19</td>
<td>4</td>
</tr>
<tr>
<td>20 to 39</td>
<td>5</td>
</tr>
<tr>
<td>40 or more</td>
<td>6</td>
</tr>
</tbody>
</table>

**During the last 12 months, on how many occasions (if any) have you used marijuana or hashish? (Do NOT count medical marijuana prescribed for you by a doctor)**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>3</td>
</tr>
<tr>
<td>6 to 9</td>
<td>4</td>
</tr>
<tr>
<td>10 to 19</td>
<td>5</td>
</tr>
<tr>
<td>20 to 39</td>
<td>6</td>
</tr>
<tr>
<td>40 or more</td>
<td>7</td>
</tr>
</tbody>
</table>

During the last 12 months, on how many occasions (if any) have you used any of the following prescription drugs without a doctor's prescription or differently than how a doctor told you to use it?

**Stimulants such as Amphetamines (bennies, speed, uppers) or diet pills**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>3</td>
</tr>
<tr>
<td>6 to 9</td>
<td>4</td>
</tr>
<tr>
<td>10 to 19</td>
<td>5</td>
</tr>
<tr>
<td>20 or more</td>
<td>6</td>
</tr>
</tbody>
</table>

**ADHD or ADD drugs (Ritalin, Adderall, hyper pills)**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>3</td>
</tr>
<tr>
<td>6 to 9</td>
<td>4</td>
</tr>
<tr>
<td>10 to 19</td>
<td>5</td>
</tr>
<tr>
<td>20 or more</td>
<td>6</td>
</tr>
</tbody>
</table>

**Pain relievers such as OxyContin, Percocet, Vicodin or others**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>3</td>
</tr>
<tr>
<td>6 to 9</td>
<td>4</td>
</tr>
<tr>
<td>10 to 19</td>
<td>5</td>
</tr>
<tr>
<td>20 or more</td>
<td>6</td>
</tr>
<tr>
<td>Substance Type</td>
<td>0 = 1</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Tranquilizers such as Valium, Xanax, Klonopin, Ativan, anxiety pills, sedatives or benzos (downers)</td>
<td>0 = 1</td>
</tr>
<tr>
<td>During the last 12 months, on how many occasions (if any) have you used...</td>
<td>0 = 1</td>
</tr>
<tr>
<td>...used LSD (acid), PCP (wet sticks or dipped joints), or other psychedelics (mushrooms, angel dust)?</td>
<td>0 = 1</td>
</tr>
<tr>
<td>...used MDMA (E, X, ecstasy, Molly), GHB (G, Liquid E, Liquid X, roofies) or Ketamine (Special K)?</td>
<td>0 = 1</td>
</tr>
<tr>
<td>...used crack, coke or cocaine in any form?</td>
<td>0 = 1</td>
</tr>
<tr>
<td>...used heroin (smack, junk, China White)?</td>
<td>0 = 1</td>
</tr>
<tr>
<td>...used methamphetamine (meth, glass, crank, crystal meth, ice)?</td>
<td>0 = 1</td>
</tr>
</tbody>
</table>
...used over-the-counter drugs such as cough syrup, cold medicine or diet pills that you took only to get high?  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6

...used synthetic marijuana (K2, Gold) that you took only to get high?  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6

...used any other synthetic drugs such as bath salts (Ivory Wave, White Lightning) that you took only to get high?  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6

...sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6  
0 = 1  
1 to 2 = 2  
3 to 5 = 3  
6 to 9 = 4  
10 to 19 = 5  
20 or more = 6

Note. This table demonstrates the 2019 MSS items and response options used to measure substance use. Each item includes the response items and the corresponding codes for each item.  
*Tobacco items combined to form a single mean item assessing tobacco use.  
**Items recoded to 6-point scale.

To create a scale assessing substance use for this study, these items were combined as follows. In the 2019 MSS, there are five questions assessing the use of tobacco products. To avoid the use of tobacco being confounded with use of other substances, these five items were recoded into a single item by taking the mean of all five items as an index of each participant’s tobacco use. These items are denoted with an asterisk in Table 3. The mean tobacco use item was added to the other items assessing use of alcohol and other substances, and a mean was taken of all items to create a substance use scale. Items assessed using a seven-point Likert-type scale on
the MSS were recoded to have values out of 6, to standardize these items with the rest of the scale. Items that were not recoded maintained the MSS original coding. These items are listed, with their recoded values, in Table 3.

Jenson (2018) used these tobacco-related items from the 2016 MSS (which were identical in the 2019 MSS) to study tobacco use, and found that Native American Students were 3.6 times more likely to report smoking cigarettes and 1.7 times more likely to report using e-cigarettes than their White peers, and that Bisexual students were 4 times more likely to smoke cigarettes and twice as likely to use e-cigarettes than heterosexual peers, suggesting criterion-related validity at least for the tobacco items. Gower et al. (2018) also used these substance use items from the 2016 MSS (identical in the 2019 MSS) to investigate illicit and prescription substance use in transgender youth and found some protective factors against the increased risk of substance use in this group, suggesting criterion-related validity for these items. Duke (2018) also used some of these substance use items from the 2016 MSS to study how adverse childhood experiences predicted alcohol, tobacco, and marijuana use, and found that childhood adversity was significantly associated with earlier substance use initiation, binge drinking, and daily tobacco, alcohol, and marijuana use, suggesting criterion-related validity at least for the items used. Cronbach’s alpha coefficient was used to evaluate the internal consistency of the substance abuse scale, which indicated adequate internal consistency for the substance use scale (alpha = 0.71).

**Data Analysis**

Hypothesis 1 stated that youth who are members of more marginalized identity groups will experience higher rates of discrimination than youth with fewer marginalized identities. Hypothesis 1 was tested using a one-way ANOVA with number of marginalized identities being
the independent variable and discrimination being the dependent variable. A linear trend analysis tested whether more marginalized identities were associated with more discrimination.

Hypothesis 2 stated that youth with more intersecting marginalized identities will engage in more substance use than youth with fewer marginalized identities. This was tested by conducting a one-way ANOVA with marginalized identities being the independent variable and substance use being the dependent variable. A linear trend analysis tested whether more marginalized identities were associated with more substance use.

Hypothesis 3 states that the relationship between multiple intersecting oppressed identity statuses and substance use will be mediated by greater perceived discrimination among students with more oppressed identity statuses. This was tested using a multiple regression model of mediation, using the PROCESS macro (Hayes, 2018) for SPSS version 27.0 for Windows (IBM Corp., 2019) to test for mediation. In this analysis, the Intersecting Identities scale was the independent variable, Substance Use was the dependent variable, and Discrimination was the mediator.

Software

The data were analyzed using IBM SPSS—26th edition and the PROCESS macro (Hayes, 2018) for SPSS version 27.0 for Windows (IBM Corp., 2019).

Ethical Issues

This study was conducted in accordance with the American Psychological Association code of ethics in regard to clinical research (American Psychological Association, 2017).

Consent

This study was conducted using archival data. Participation was voluntary, and the school districts, parents, and students could choose not to participate. The purpose and intended use of
the MSS were disclosed to the participants and their parents/guardians; they were told that the MSS is an anonymous statewide school-based survey conducted to gain insights into the world of students and their experiences. A passive consent method was used after parents (or guardians) were informed of the study and its purposes in a letter informing each party. Parents were directed that unless they contacted the school to exclude their child from the survey, the student would be asked to complete the survey. Children were also given the option to opt out of the study. The consent form is attached as appendix D, which is a form that each school or district individualized and distributed to the parents or guardians of participants in advance of the survey. The consent form also advised the guardians and students of their rights to not participate in the study. Appendix E displays the opt-out form, which was provided to students and their families in order to enable them to not participate in the study.

*Risks*

Risks of the original MSS included the possibility of loss of confidentiality and psychological distress. Many items of the 2019 MSS target specific and sensitive information which, if the confidentiality of the surveys were compromised, could lead to humiliation, psychological harm, legal consequences, or scrutiny for participants. This risk was ameliorated in this study by the nature of the data collection being anonymous, which prevented any identification of participants by this researcher or other researchers. Participants were not asked to provide their name and were instead given an identifying number that cannot be linked to their name or identity by anyone.

A second risk is that because of the personal and sensitive nature of the questions, filling out the MSS may have been psychologically distressing. A list of mental health resources was provided to the students, the educators, and the parents/guardians following the administration of
the MSS in a packet of resources to decrease this risk of harm, and participants were reminded that participation in the survey was voluntary and that they could choose not to participate or only answer certain items. The list of resources provided to participants is attached as Appendix A. No additional risk of distress to participants was posed by this secondary analysis of these data in the current study.

**Deception**

There was no deception of participants in this study.

**Confidentiality**

The Minnesota Student Survey collects data from students anonymously; neither the original researchers nor I have any information that could be used to link a participant’s responses to their name or any other unique identifier. The archival datasets provided to researchers for secondary analysis have no identifying data in them and identify unique cases using participant ID numbers that cannot be linked to participant names or identities by anyone, including me. The dataset has been maintained in a secure and encrypted file on a flash drive that is only accessible to me and my committee members.

**Information and Debriefing**

Participants, parents/guardians, school districts, individual schools, and the staff administering the survey were provided a letter informing each party of the 2019 MSS. The Minnesota Student Survey Overview (*2019 Minnesota Student Survey Statewide Tables, 2019*) states:

The Minnesota Student Survey (MSS) is … an anonymous statewide school-based survey conducted to gain insights into the world of students and their experiences…. 
The survey is voluntary for schools and students. Schools have the option of not participating in the survey. If a school chooses to participate, it must notify parents and inform them of their right to review the survey questions and opt out their child. This notification requirement is an obligation under the federal Protection of Pupil Rights Amendment (PPRA). Students also can decide not to take the survey or stop at any point while taking it. (Minnesota Student Survey Interagency Team, 2019 p. 2).

All parties including the school districts, individual schools, parents/guardians, and the participants were provided a packet of frequently asked questions about the study (see Appendix F), directions for school coordinators, staff administering the survey, and a list of mental health resources (see Appendix A). No additional information or debriefing was provided to the participants in the current study, as participants are not identifiable.

**Retention of Data**

Data will be kept for five years following submission of the clinical research project to Idun, after which time the data will be destroyed per Augsburg’s retention of data policies. If published, the data will be destroyed five years after the date of publication.

**Permissions**

A request to access the individual-level data for the 2019 Minnesota Student Survey was made through the Minnesota Department of Health (MDH) on 04/01/2022. This researcher completed the Minnesota Student Survey Data Request (see Appendix A) form submitted through the MDH. Researchers must agree to not provide the MSS dataset to any other party. I maintained the dataset in a secure and encrypted file that is only accessible by myself and the members of my committee. The research was conducted according to the written protocol I submitted and had approved by Augsburg’s Institutional Review Board (IRB) and a copy of the
IRB approval was submitted to Minnesota Department of Education (MDE) with the original data request (see Appendix B and Appendix C) on 03/30/2022. The MSS Interagency Team via MDE will be provided with a written or electronic copy of this CRP, per the data use agreement following its final approval and submission to Idun.
**Chapter 4: Results**

The sample included 80,456 participants. Table 4 displays participant demographics. Boys and girls were evenly represented in the sample. Participants were predominantly White, with about a quarter of the sample identifying as non-White. A majority of participants identified as heterosexual or straight, and just 1% of the sample identified as being transgender, genderqueer, or genderfluid. There were more participants in the 9th grade than in the 11th grade. The observed range for the marginalized identity scale was 0, which refers to participants who were cis-gendered, heterosexual, White, males to 4, which refers to participants who identified as assigned female at birth, gender diverse, queer, and a person of color. The mean for the marginalized identity scale was 0.92, meaning that the average Minnesota student endorsed almost one area of marginalization.

**Table 4**

*Characteristics of sample.*

<table>
<thead>
<tr>
<th>Participant Characteristic</th>
<th>All participants (n=80,456)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological sex</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>40121 (49.9)</td>
</tr>
<tr>
<td>Female</td>
<td>40163 (49.9)</td>
</tr>
<tr>
<td><em>Not reported</em></td>
<td>172 (0.2)</td>
</tr>
<tr>
<td><strong>Race and ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>62017 (77.1)</td>
</tr>
<tr>
<td>Black, African or African American</td>
<td>8186 (10.2)</td>
</tr>
<tr>
<td>Hispanic or Latino/a</td>
<td>7278 (9.0)</td>
</tr>
<tr>
<td>Asian or Asian American</td>
<td>6558 (8.2)</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>2989 (3.7)</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>540 (0.7)</td>
</tr>
<tr>
<td>Multiracial</td>
<td>7,112</td>
</tr>
<tr>
<td>Non-White Total</td>
<td>25551 (31.8)</td>
</tr>
</tbody>
</table>
Not reported 545 (0.7)

Sexual Orientation
- Heterosexual (straight) 62799 (78.1)
- Bisexual 4515 (5.6)
- Gay or lesbian 1253 (1.6)
- Questioning/not sure 1662 (2.1)
- Pansexual 1305 (1.7)
- Queer 351 (0.4)
- Not reported 663 (0.8)

Are you transgender, genderqueer, or genderfluid?
- No 75220 (93.5)
- Yes 1141 (1.4)
  - I am not sure about my gender identity (1.2)
  - I am not sure what this question means (3.0)
- Not reported 307 (0.4)

Grade
- 9th 45232 (56.2)
- 11th 35224 (43.8)

Marginalized Identity Scale 0.92 (0.82)
Discrimination Scale 1.14 (0.40)
Substance Use Scale 1.08 (0.37)

Note: Items in italics were excluded from the study measures, and students who endorsed these items were excluded from analyses that included them.

*Participants were able to select more than one racial identity, making the total for race sum to more than 100%.

Discrimination

Table 5 shows how often students endorsed being bullied in a 30-day period due to identity-based discrimination. Participants most commonly reported racial discrimination,
followed by gender discrimination, and sexual orientation discrimination. The observed range for
the discrimination scale was 1.00, meaning the participants never experienced bullying due to
their identity to 5.00, meaning that the participants were bullied daily due to all areas of their
identity. The mean for the marginalized identity scale was 1.14, meaning that the average
Minnesota teen did not experience or rarely experienced discriminatory bullying.

Table 5

Frequency of Discrimination.

| Item                                                                 | Responses            | Participants/|%
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Your race, ethnicity or national origin</td>
<td>Never</td>
<td>60030</td>
</tr>
<tr>
<td></td>
<td>Once or Twice</td>
<td>6370</td>
</tr>
<tr>
<td></td>
<td>About once a week</td>
<td>1296</td>
</tr>
<tr>
<td></td>
<td>Several times a week</td>
<td>761</td>
</tr>
<tr>
<td></td>
<td>Every day</td>
<td>655</td>
</tr>
<tr>
<td></td>
<td>Not reported</td>
<td>2344</td>
</tr>
<tr>
<td>Your gender (being male, female, transgender, etc.)</td>
<td>Never</td>
<td>72600</td>
</tr>
<tr>
<td></td>
<td>Once or Twice</td>
<td>3544</td>
</tr>
<tr>
<td></td>
<td>About once a week</td>
<td>847</td>
</tr>
<tr>
<td></td>
<td>Several times a week</td>
<td>427</td>
</tr>
<tr>
<td></td>
<td>Every day</td>
<td>447</td>
</tr>
<tr>
<td></td>
<td>Not reported</td>
<td>2591</td>
</tr>
<tr>
<td>Because you are gay, lesbian, or bisexual or because someone</td>
<td>Never</td>
<td>72383</td>
</tr>
<tr>
<td>thought you were</td>
<td>Once or Twice</td>
<td>3300</td>
</tr>
<tr>
<td></td>
<td>About once a week</td>
<td>952</td>
</tr>
<tr>
<td></td>
<td>Several times a week</td>
<td>613</td>
</tr>
<tr>
<td></td>
<td>Every day</td>
<td>578</td>
</tr>
<tr>
<td></td>
<td>Not reported</td>
<td>2631</td>
</tr>
</tbody>
</table>
Note: Items in italics were excluded from the study measures, and students who endorsed these items were excluded from analyses that included them.

**Substance Use Scale**

Participants in the study answered multiple questions regarding the frequency of their substance use. The minimum observed score on the scale was 0.86, meaning not using any substances in the last 30-day or 12-month period. The maximum observed score was a 6.00, meaning daily or very frequent use of all substances in the measures. Overall, higher scores on the scale indicate more frequent substance use than lower scores on the scale. The mean substance use endorsed in the scale was $M = 1.05$, $SD = 0.34$ which was a low score, meaning most participants in the study reported infrequent substance use. The frequency of substance use is displayed in Table 6.

**Table 6**

*Frequency of Substance Use.*

<table>
<thead>
<tr>
<th>Item</th>
<th>0 days</th>
<th>1 to 2 days</th>
<th>3 to 9 days</th>
<th>10 to 19 days</th>
<th>20 to 29 days</th>
<th>All 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>*...smoke a cigarette?</td>
<td>54924(98.7)</td>
<td>463(0.8)</td>
<td>136(0.2)</td>
<td>63(0.1)</td>
<td>24(&lt;0.1)</td>
<td>53(0.1)</td>
</tr>
<tr>
<td>*...smoke cigars, cigarillos or little cigars?</td>
<td>55290(99.3)</td>
<td>239(0.4)</td>
<td>77(0.1)</td>
<td>19(&lt;0.1)</td>
<td>18(&lt;0.1)</td>
<td>20(&lt;0.1)</td>
</tr>
</tbody>
</table>
**...use chewing tobacco, snuff or dip?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days</td>
<td>55284(99.3)</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>228(0.4)</td>
</tr>
<tr>
<td>3 to 9 days</td>
<td>62(0.1)</td>
</tr>
<tr>
<td>10 to 19 days</td>
<td>33(0.1)</td>
</tr>
<tr>
<td>20 to 29 days</td>
<td>16(&lt;0.1)</td>
</tr>
<tr>
<td>All 30 days</td>
<td>40(0.1)</td>
</tr>
</tbody>
</table>

**...vape or use an e-cigarette like JUUL, suorin, blu, VUSE, or logic?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days</td>
<td>49470(88.9)</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>3032(5.4)</td>
</tr>
<tr>
<td>3 to 9 days</td>
<td>1228(2.2)</td>
</tr>
<tr>
<td>10 to 19 days</td>
<td>676(1.2)</td>
</tr>
<tr>
<td>20 to 29 days</td>
<td>434(0.8)</td>
</tr>
<tr>
<td>All 30 days</td>
<td>823(1.5)</td>
</tr>
</tbody>
</table>

**...use a hookah or a waterpipe to smoke tobacco?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days</td>
<td>55383(99.5)</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>157(0.3)</td>
</tr>
<tr>
<td>3 to 9 days</td>
<td>52(0.1)</td>
</tr>
<tr>
<td>10 to 19 days</td>
<td>24(&lt;0.1)</td>
</tr>
<tr>
<td>20 to 29 days</td>
<td>15(&lt;0.1)</td>
</tr>
<tr>
<td>All 30 days</td>
<td>32(0.1)</td>
</tr>
</tbody>
</table>

**During the last 30 days, on how many days did you drink one or more drinks of an alcoholic beverage?**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days</td>
<td>55222(99.2)</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>343(0.6)</td>
</tr>
<tr>
<td>3 to 5 days</td>
<td>58(0.1)</td>
</tr>
<tr>
<td>6 to 9 days</td>
<td>22(&lt;0.1)</td>
</tr>
<tr>
<td>10 to 19 days</td>
<td>8(&lt;0.1)</td>
</tr>
<tr>
<td>20 to 29 days</td>
<td>1(&lt;0.1)</td>
</tr>
<tr>
<td>All 30 days</td>
<td>9(&lt;0.1)</td>
</tr>
</tbody>
</table>

**During the last 30 days, on how many days did you use marijuana or hashish? (Do NOT count medical marijuana prescribed for you by a doctor)**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days</td>
<td>53066(95.3)</td>
</tr>
<tr>
<td>1 day</td>
<td>1122(2.0)</td>
</tr>
<tr>
<td>2 days</td>
<td>434(0.8)</td>
</tr>
<tr>
<td>3 to 5 days</td>
<td>292(0.5)</td>
</tr>
<tr>
<td>6 to 9 days</td>
<td>296(0.5)</td>
</tr>
<tr>
<td>10 to 19 days</td>
<td>180(0.3)</td>
</tr>
<tr>
<td>20 or more days</td>
<td>273(0.5)</td>
</tr>
</tbody>
</table>
**During the last 30 days, on how many days did you use prescription drugs without a doctor's prescription or differently than how a doctor told you to use it?**

<table>
<thead>
<tr>
<th>Days</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days</td>
<td>54627</td>
<td>98.1</td>
</tr>
<tr>
<td>1 to 2 days</td>
<td>642</td>
<td>1.2</td>
</tr>
<tr>
<td>3 to 5 days</td>
<td>158</td>
<td>0.3</td>
</tr>
<tr>
<td>6 to 9 days</td>
<td>74</td>
<td>0.1</td>
</tr>
<tr>
<td>10 to 19 days</td>
<td>56</td>
<td>0.1</td>
</tr>
<tr>
<td>20 to 29 days</td>
<td>25</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>All 30 days</td>
<td>81</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**During the last 12 months, on how many occasions (if any) have you had alcoholic beverages to drink?**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>47640</td>
<td>85.6</td>
</tr>
<tr>
<td>1 to 2</td>
<td>5253</td>
<td>9.4</td>
</tr>
<tr>
<td>3 to 5</td>
<td>1721</td>
<td>3.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>614</td>
<td>1.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>283</td>
<td>0.5</td>
</tr>
<tr>
<td>20 to 39</td>
<td>81</td>
<td>0.1</td>
</tr>
<tr>
<td>40 or more</td>
<td>71</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**During the last 12 months, on how many occasions (if any) have you used marijuana or hashish? (Do NOT count medical marijuana prescribed for you by a doctor)**

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>51601</td>
<td>92.7</td>
</tr>
<tr>
<td>1 to 2</td>
<td>1506</td>
<td>2.7</td>
</tr>
<tr>
<td>3 to 5</td>
<td>667</td>
<td>1.2</td>
</tr>
<tr>
<td>6 to 9</td>
<td>462</td>
<td>0.8</td>
</tr>
<tr>
<td>10 to 19</td>
<td>454</td>
<td>0.8</td>
</tr>
<tr>
<td>20 to 39</td>
<td>309</td>
<td>0.6</td>
</tr>
<tr>
<td>40 or more</td>
<td>664</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**During the last 12 months, on how many occasions (if any) have you used any of the following prescription drugs without a doctor's prescription or differently than how a doctor told you to use it?**

Stimulants such as Amphetamines (bennies, speed, uppers) or diet pills

<table>
<thead>
<tr>
<th>Occasions</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55429</td>
<td>99.6</td>
</tr>
<tr>
<td>1 to 2</td>
<td>136</td>
<td>0.2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>38</td>
<td>0.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>27</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>16</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>17</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>
### ADHD or ADD drugs (Ritalin, Adderall, hyper pills)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>54876</td>
<td>98.6</td>
</tr>
<tr>
<td>1 to 2</td>
<td>425</td>
<td>0.8</td>
</tr>
<tr>
<td>3 to 5</td>
<td>141</td>
<td>0.3</td>
</tr>
<tr>
<td>6 to 9</td>
<td>60</td>
<td>0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>35</td>
<td>0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>126</td>
<td>0.2</td>
</tr>
</tbody>
</table>

### Pain relievers such as OxyContin, Percocet, Vicodin or others

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>54592</td>
<td>98.1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>674</td>
<td>1.2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>214</td>
<td>0.4</td>
</tr>
<tr>
<td>6 to 9</td>
<td>86</td>
<td>0.2</td>
</tr>
<tr>
<td>10 to 19</td>
<td>50</td>
<td>0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>47</td>
<td>0.1</td>
</tr>
</tbody>
</table>

### Tranquilizers such as Valium, Xanax, Klonopin, Ativan, anxiety pills, sedatives or benzos (downers)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55182</td>
<td>99.1</td>
</tr>
<tr>
<td>1 to 2</td>
<td>251</td>
<td>0.5</td>
</tr>
<tr>
<td>3 to 5</td>
<td>98</td>
<td>0.2</td>
</tr>
<tr>
<td>6 to 9</td>
<td>49</td>
<td>0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>25</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>58</td>
<td>0.1</td>
</tr>
</tbody>
</table>

During the last 12 months, on how many occasions (if any) have you used...

...used LSD (acid), PCP (wet sticks or dipped joints), or other psychedelics (mushrooms, angel dust)?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55275</td>
<td>99.3</td>
</tr>
<tr>
<td>1 to 2</td>
<td>260</td>
<td>0.5</td>
</tr>
<tr>
<td>3 to 5</td>
<td>68</td>
<td>0.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>33</td>
<td>0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>8</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>18</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

...used MDMA (E, X, ecstasy, Molly), GHB (G, Liquid E, Liquid X, roofies) or Ketamine (Special K)?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55487</td>
<td>99.7</td>
</tr>
<tr>
<td>1 to 2</td>
<td>117</td>
<td>0.2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>32</td>
<td>0.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>17</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>4</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>6</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>
...used crack, coke or cocaine in any form?

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55498</td>
<td>99.7</td>
</tr>
<tr>
<td>1 to 2</td>
<td>90</td>
<td>0.2</td>
</tr>
<tr>
<td>3 to 5</td>
<td>25</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>21</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>6</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>23</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

...used heroin (smack, junk, China White)?

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55562</td>
<td>99.8</td>
</tr>
<tr>
<td>1 to 2</td>
<td>47</td>
<td>0.1</td>
</tr>
<tr>
<td>3 to 5</td>
<td>16</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>11</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>11</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>16</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

...used methamphetamine (meth, glass, crank, crystal meth, ice)?

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55537</td>
<td>99.8</td>
</tr>
<tr>
<td>1 to 2</td>
<td>62</td>
<td>0.1</td>
</tr>
<tr>
<td>3 to 5</td>
<td>20</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>6 to 9</td>
<td>12</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>8</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>24</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

...used over-the-counter drugs such as cough syrup, cold medicine or diet pills that you took only to get high?

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>54953</td>
<td>98.7</td>
</tr>
<tr>
<td>1 to 2</td>
<td>418</td>
<td>0.8</td>
</tr>
<tr>
<td>3 to 5</td>
<td>148</td>
<td>0.3</td>
</tr>
<tr>
<td>6 to 9</td>
<td>68</td>
<td>0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>30</td>
<td>0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>46</td>
<td>0.1</td>
</tr>
</tbody>
</table>

...used synthetic marijuana (K2, Gold) that you took only to get high?

<table>
<thead>
<tr>
<th>Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55026</td>
<td>98.9</td>
</tr>
<tr>
<td>1 to 2</td>
<td>356</td>
<td>0.6</td>
</tr>
<tr>
<td>3 to 5</td>
<td>116</td>
<td>0.2</td>
</tr>
<tr>
<td>6 to 9</td>
<td>71</td>
<td>0.1</td>
</tr>
<tr>
<td>10 to 19</td>
<td>33</td>
<td>0.1</td>
</tr>
<tr>
<td>20 or more</td>
<td>61</td>
<td>0.1</td>
</tr>
</tbody>
</table>
...used any other synthetic drugs such as bath salts (Ivory Wave, White Lightning) that you took only to get high?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55537(99.8)</td>
</tr>
<tr>
<td>1 to 2</td>
<td>62(0.1)</td>
</tr>
<tr>
<td>3 to 5</td>
<td>31(0.1)</td>
</tr>
<tr>
<td>6 to 9</td>
<td>13(&lt;0.1)</td>
</tr>
<tr>
<td>10 to 19</td>
<td>4(&lt;0.1)</td>
</tr>
<tr>
<td>20 or more</td>
<td>16(&lt;0.1)</td>
</tr>
</tbody>
</table>

...sniffed glue or huffed or inhaled the contents of aerosol spray cans or other gases to get high?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55276(99.3)</td>
</tr>
<tr>
<td>1 to 2</td>
<td>257(0.5)</td>
</tr>
<tr>
<td>3 to 5</td>
<td>44(0.1)</td>
</tr>
<tr>
<td>6 to 9</td>
<td>25(&lt;0.1)</td>
</tr>
<tr>
<td>10 to 19</td>
<td>6(&lt;0.1)</td>
</tr>
<tr>
<td>20 or more</td>
<td>37(0.1)</td>
</tr>
</tbody>
</table>

Note. This table demonstrates the frequency of responses endorsing substance use. **Items recoded to 6-point scale.

Marginalized Identity and Discrimination

Hypothesis 1 stated that youth who are members of more marginalized identity groups would experience higher rates of discrimination than youth with fewer marginalized identities. This hypothesis was tested using a one-way ANOVA with discrimination being the dependent variable and number of marginalized identities being the independent variable. A linear trend analysis was completed to determine whether more marginalized identities were associated with more discrimination. Assumptions for hypothesis 1 were tested by evaluating the sources of bias and using robust measures to reduce bias. As an initial check for linearity and unusual cases, I completed scatterplots as a visual aid for illustrating the distribution of the data. The scatterplots for the predictors appeared to be linear, although there was slight funneling toward the left side. Many of the data points appeared to be clustered on the right side of the graph. There was no
evidence of a random distribution or multimodality. Therefore, it is safe to assume that the data is linear. I checked the output, graphs, and residuals for signs that would signify that the assumptions for this model were not met. The assumption of independence was met due to the data points representing a different individual rather than data shared from one individual. The Central Limit Theorem suggests that a large sample size assumes normality of the sampling distribution and will take the shape of a normal distribution regardless of the shape of the population from which that the sample was taken (Field, 2018). However, in case of any undetected bias in these data or violations of assumptions, I performed a robust ANOVA using the Welch’s F statistic and bootstrapping in all analyses.

Marginalized identity was significantly associated with discrimination, Welch’s $F(4, 1431.23) = 333.45$, $p < 0.001$. There was also a significant linear trend $F(1) = 864.67$, $p < 0.001$ indicating that as the number of marginalized identities increased, the frequency of discrimination also increased. The effect size of the test was eta squared $= 0.035$, which is a very small effect. In general, participants reported a low level of discrimination even with many marginalized identities; the mean score for participants with no marginalized identities was 1.09 (where 1 = never experiencing discrimination), whereas individuals who reported four areas of marginalized identity had a mean score of 1.78 (experiencing discrimination between “never” and “once or twice”). Figure 1 displays the linear trend relationship between discrimination and marginalized identity.
Hypothesis 2 stated that youth with more intersecting marginalized identities would engage in more substance use than youth with fewer marginalized identities. This was tested by conducting a one-way ANOVA with number of marginalized identities being the independent variable and substance use being the dependent variable. Assumptions for hypothesis 2 were tested by evaluating the sources of bias and using robust measures to reduce bias. Similar to hypothesis 1, as an initial check for linearity and unusual cases, I completed scatterplots as a visual aid for illustrating the distribution of the data. The scatterplots for the predictors appeared to be linear, although there was slight funneling toward the left side. There was no evidence of a random distribution or multimodality. Therefore, it is safe to assume that the data is linear. I checked the output, graphs, and residuals for signs that would signify that the assumptions for

**Figure 1**

*Frequency of Discrimination and Marginalized Identity*

Note: *Figure 1* displays the relationship between reported experiences with discrimination and having multiple marginalized identity statuses.

**Marginalized Identity and Substance Use**

...
this model were not met. The assumption of independence was met due to the data points representing a different individual rather than data shared from one individual. The Central Limit Theorem suggests that a large sample size assumes normality of the sampling distribution and will take the shape of a normal distribution regardless of the shape of the population from which that the sample was taken (Field, 2018). However, in case of any undetected bias in these data or violations of assumptions, I performed a robust ANOVA using the Welch’s F statistic and bootstrapping in all analyses. A linear trend analysis was conducted to evaluate whether more marginalized identities were associated with more substance use.

Marginalized identity was significantly associated with frequency of substance use, Welch’s $F(4, 1352.59) = 27.46, p < 0.001$. There was a significant linear trend $F(1) = 19.94, p < 0.001$, demonstrating that as the number of marginalized identities increased, the frequency of substance use also increased. The eta-squared effect size was 0.002 which indicated a very small effect. Figure 2 shows these small differences between groups. A score of approximately one on the substance use scale indicates relatively infrequent use; however, it is not the minimum score possible. As scores increased, there was significantly more frequent substance use. The mean scores for individuals who were not marginalized in terms of identity were higher than those with one and even two areas of marginalized identity. However, individuals with three and four areas of marginalized identity, had the highest frequency of substance use respectively.
Discrimination as a Mediator of Marginalized Identity and Substance Use

Hypothesis 3 stated that the relationship between multiple intersecting oppressed identity statuses and substance use would be mediated by greater perceived discrimination among students with more oppressed identity statuses. This was tested using a multiple regression model, using the PROCESS macro (Hayes, 2018) for SPSS version 27.0 for Windows (IBM Corp., 2019) to test for mediation. Assumptions for hypothesis 3 were tested by evaluating the sources of bias and using robust measures to reduce bias. As an initial check for linearity and unusual cases, I completed scatterplots as a visual aid for illustrating the distribution of the data. The scatterplots for the predictors appeared to be linear although there was slight funneling toward the left side. Many of the data points appeared to be clustered on the right side of the graph. There was no evidence of a random distribution or multimodality. Therefore, it is safe to
assume that the data is linear. I checked the output, graphs, and residuals for signs that would signify that the assumptions for this model were not met. The assumption of independence was met due to the data points representing a different individual rather than data shared from one individual. The Central Limit Theorem suggests that a large sample size assumes normality of the sampling distribution and will take the shape of a normal distribution regardless of the shape of the population from which that the sample was taken (Field, 2018). However, in case of any undetected bias in these data or violations of assumptions, I performed a robust mediation analysis using the PROCESS macro and bootstrapping in all analyses. In this analysis, the number of intersecting identities was the independent variable, substance use was the dependent variable, and perceived discrimination was the mediator.

In this analysis, consistent with the test of hypothesis 1 reported above, number of marginalized identities did significantly predict experienced discrimination $b = 0.08$, 95% CI [0.08-0.08], $t = 45.7$, $p = < 0.001$. The number of marginalized identities explained 3% of the variance in discrimination, meaning that as number of marginalized identities increases, so did perceived discrimination. Perceived discrimination significantly predicted substance use even with number of marginalized identities in the model, $b = .15$, 95% CI [0.15 – 0.16], $t = 43.3$, $p = <0.001$. However, in the full model, number of marginalized identities significantly but negatively predicted substance use, $b = -0.01$, 95% CI [-0.01 - -0.01], $t = -5.06$, $p = <0.001$. When discrimination is not included in the model, number of marginalized identities slightly but significantly positively predicts substance use, $b = .004$, 95% CI [-0.005 - 0.007], $t = 2.25$, $p = .024$. However, in the full model, the direct effect of the number of marginalized identities on substance use is significant but negative, $b = -0.01$, 95% CI [ -0.01 - -0.01]; holding more marginalized identities predicts less substance use.
There is evidence for discrimination as a mediator of the relationship between number of marginalized identities and discrimination, and in fact, accounting for experiences of discrimination changes the direction of the relationship between number of marginalized identities and substance use overall. The indirect effect of number of marginalized identities on substance use via discrimination was significant, $b = .02$, 95% CI [0.02 – 0.3]. Therefore, discrimination fully mediated the effect of number of marginalized identities on substance use, and, in fact, the relationship between number of marginalized identities and substance use becomes negative once discrimination is accounted for in the model. Hypothesis 3 was supported, and there is evidence that having more marginalized identities was negatively related to substance use as long as discrimination is not a factor. Exposure to discrimination, rather than marginalized identities per se, appears to explain the variance in substance use. Figure 3 displays the mediation analysis including the direct and indirect effects of discrimination and marginalized identity on substance use.
Figure 3

Mediation Analysis

Indirect Effect = 0.02

M = Discrimination

$\alpha = 0.8$

X = Minoritized Identity

$\beta = 0.15$

Y = Substance Use

$c^* = 0.004$

Direct Effect ($c$) = -0.01

Note: Figure 3 displays the mediation analysis including the relationship between minoritized identity and discrimination ($\alpha=0.8$), discrimination and substance use ($\beta=0.15$), and minoritized identity and substance use ($c=-0.01$), and the relationship between minoritized identity and substance use with discrimination in the model ($c^*=0.004$).
**Chapter 5: Discussion**

The purpose of this study was to identify how holding multiple intersecting identities affects discrimination and substance use. Hypotheses were tested using the 2019 Minnesota Student Survey (MSS) to test the combined effects of holding multiple marginalized identity statuses and experiencing discrimination on substance use among teens in Minnesota. Discriminatory bullying is a specific form of bullying that is focused on aspects of an individual’s identity (Elamé, 2013). In this study, as hypothesized, holding multiple marginalized identities was associated with teens experiencing higher rates of discriminatory bullying.

Being a marginalized youth in the United States often involves exposure to discrimination. Marks et al. (2020) discussed the various aspects of marginalization in the history of United States, including experiences of social and political oppression, poverty, lack of housing, colonization, slavery, and genocide. Being marginalized does not necessarily mean being a minority in number. Women make up a majority of the population and have a long-standing history of marginalization, including limitations in their health care, voting rights, and wages, as well as exposure to increased violence. Current U.S. federal and local policies also continue oppression and marginalization, such as the overturning of Roe v. Wade, the gender wage gap, the Muslim travel ban, police shootings and mass incarceration of BIPOC Americans, and migrant children being imprisoned (Gray, 2018 & Ray et al., 2017) These series of events and experiences can lead to maladaptive coping mechanisms including substance use.

I hypothesized that youth who are members of more marginalized identity groups would experience higher rates of discrimination than youth with fewer marginalized identities. This hypothesis was supported. However, the overall frequency of discrimination among teens reported in the present study was less than in some similar recent studies. Shin et al. (2011)
estimated that discrimination due to ethnicity happened to approximately 29% of the participants, Russell et al. (2012) estimated racial discrimination happening to 16% of their sample and Fry et al. (2008) stated that 84% of Latinx students in U.S. public schools in their study reported racial discrimination. Racial discrimination was the most common form of discrimination perceived by participants in the present study. However, racial discrimination over the past 30 days was reported by just 11.2% of these students, with most of those students (7.9%) reporting that they experienced the discriminatory bullying “once or twice.” Sexual orientation and gender discrimination were also less common in this sample than might have been expected based on previous research. According to Mitchell et al. (2014), 52% of cisgendered women experience discrimination and 81% of transgender individuals experience discrimination. In this study, just 6.6% of students reported gender discrimination and 6.8% reported sexual orientation discrimination.

In the 2020-2021 National Survey of Children Health (NSCH) survey (Child and Adolescent Health Measurement Initiative, 2021), 59,790 children between the ages of 6 and 17 across the United States answered questions regarding their emotional and mental health. The NSCH also evaluated each state’s outcomes for these items. Children in the state of Minnesota (N= 906) reported somewhat higher rates of bullying than the national rates. Of the youth who participated in the survey, 33.3% experienced being bullied, picked on, or excluded by other children within the past 12 months. Further, 24.3% of the participants reported being bullied 1 or 2 times in the past year, and 5.1% reported being bullied once or twice a month which is comparable to the rates of the present study. The NSCH also found that 2.6% reported being bullied once or twice a week, which is roughly comparable to the findings of the present study, where 1.3% of participants reported discriminatory bullying once a week and 0.7% reported
experiencing bullying several times a week. Both the present study and the NSCH found that near daily bullying was relatively rare (1.5% in the NSCH dataset versus 0.7% in the present study; Child and Adolescent Health Measurement Initiative, 2020-2021).

I found that, as hypothesized, there was a statistically significant, although small relationship between having multiple marginalized identities and engaging in more substance use. Most youth, overall, reported infrequent substance use. In fact, most students reported either no use or only using on one or two occasions. Teenagers often report much lower substance use than what they estimate their peers’ substance use to be. This phenomenon of overestimating adolescent alcohol and substance use when in fact most students do not use nearly as much as people perceive them as using can continue well into adulthood, such that adults also overestimate how intensely others engage in substance use (Pape, 2012). Although most participants in this study reported using few substances and with low frequency, the rates did increase slightly on a linear basis with greater numbers of marginalized identities.

In general, finding that marginalized identities increase risk for substance abuse is somewhat consistent with the results of other similar studies. Goldbach et al. (2014) and Reisner et al. (2015) found that being a sexual minority was associated with higher rates of rejection and isolation from family and friends, and risk behaviors, including substance use. Parent et al., (2019) also found that individuals with multiple marginalized identities had higher rates of substance use. The authors theorized that, as hypothesized by minority stress theory, among sexual and gender minority individuals of various ages, chronic stress from discrimination and oppression can cause health problems and encourage maladaptive coping mechanisms. In relation to intersecting identities, Mereish and Bradford (2014) found that the additive effect of belonging to multiple marginalized groups (e.g., being both a sexual minority, a woman, and a
person of color) was associated with both a higher lifetime prevalence and higher current prevalence of substance use.

Previous studies on this topic have found larger effects than this study’s, as this study’s effect sizes were quite small. These lower effect sizes may be due to the relatively low overall frequency of substance use reported by MSS participants: only 12% of Minnesota Students endorsed using tobacco products, 16% using alcohol, 8% using cannabis, and 2% or less using all other substances in the past year (2019 Minnesota Student Survey Statewide Tables, 2019).

In this study, the relationship between having multiple marginalized identities and substance use was fully mediated by exposure to discrimination; in fact, the relationship between multiple intersecting identities and substance use became negative once discrimination was accounted for in the model. These findings suggest that having multiple intersecting identities was not harmful in terms of risk for substance abuse in and of itself. Instead, it appears the risk of having multiple intersecting oppressed identities may be primarily that students are then exposed to discriminatory bullying, and it is the bullying, not the identity, which predicts substance use behaviors. Having multiple marginalized identities may expose some Minnesota teens to increased discriminatory bullying, which in turn may cause an increase in substance use. Bowleg et al. (2003) suggested that black lesbian women experienced a “triple jeopardy” of marginalization, leading to increased stress. The average student in the present study reported experiencing discrimination once or twice a month, which can be distressing. As students are repeatedly exposed to discrimination, it appears as though they are more likely to use substances.

These results are consistent with General Strain Theory’s (GST) understanding of intersectionality, discrimination, and substance use (Agnew, 1992). GST suggests that the stress
of being marginalized can lead to negative emotional states and therefore may lead to maladaptive coping mechanisms. This is particularly the case when exposed to discrimination, which is likely to increase the level of stress. The results of Hypothesis 2 and the mediation analysis of Hypothesis 3 indicated that individuals were more likely to use substances when exposed to discrimination and holding multiple marginalized identities. However, the relationship between marginalized identity in and of itself and substance use was negative once exposure to discrimination was accounted for in the model. This is not consistent with GST, as GST would suggest that there are other sources of stress associated with having a marginalized identity itself besides interpersonal discrimination and bullying. However, it is possible that not all children are as aware of other issues related to being marginalized besides interpersonal discrimination. GST would suggest that institutional discrimination and systematic discrimination would also create strain on the marginalized population. Children may be protected by their lack of understanding about these issues, due to their age, unless they were specifically taught about them. For example, a student may not attribute inequitable school funding at primarily BIPOC schools in the United States to racial discrimination or to their own race. Also, some adolescents in the sample may be early in their identity development. If individuals are not as strongly connected to their marginalized identity statuses or these aspects of their identities are not salient to them due to their age, they may not carry as much stress. For youth, the main stressor associated with holding a marginalized identity or multiple marginalized identities may be interpersonal, in the form of people in their social worlds causing them discrimination and harm.

The finding that the impact of discrimination predicts substance use was consistent with previous studies. However, a unique contribution of this study was the finding that marginalized
students who did not experience discrimination were actually less likely to engage in substance use. Having more marginalized identities was protective against substance use as long as discrimination was not a factor. Newcomb et al. (2014) found that being a marginalized person led to a stronger sense of community for those who held one marginalized identity. However, the stress of having more than one area of marginalization increased the probability of isolation. These results were consistent with the results of the one-way ANOVA in Hypothesis 2. For those that experienced discrimination, the impact was so damaging to students, it led to an increase in substance use despite the protection of their identity groups. Stereotypes of marginalized identities often associate those identities with substance use or other negative behaviors. These results refute such stereotypes and suggest that when marginalized youth do engage in substance use, it may not be because of their identity or their communities or cultures; instead, those may be factors that prevent substance use. Discriminating against individuals who hold less power may cause so much harm to those who are marginalized that the protective impact of their identity and their community may be overshadowed. Treating people with respect and with dignity despite their sexuality, color of their skin, gender identity, etc. can decrease substance use in the adolescent population.

**Limitations**

When interpreting the results of this study there are several limitations to take into consideration. One aspect of this study that may have confounded the results is the fact that students who got higher scores on discriminatory bullying scale had more opportunity than students with lower scores to indicate experiencing multiple kinds of discriminatory bullying. Therefore, the number of intersecting identities is partially confounded with discriminatory bullying. However, the fact that discriminatory bullying had a different relationship with the
outcome than number of multiple intersecting identities suggests that this potential confound may not have prevented me from detecting significant effects.

Several other limitations were related to the items available and the structure of the 2019 MSS and the structure of this study. Beginning with the items related to identity, the initial question regarding gender is stated as “biological sex” and does not include intersex or another options for participants that biologically do not fall under the “male” or “female” categories. Not only are there individuals who do not fall perfectly into a false dichotomy of the male and female aspects of “biological sex,” there are also intersex individuals who have a diversity of embodied and gender identities and may identify as male or female or neither. Additionally, biological sex and gender are inherently different concepts as gender is a set of social, psychological, behavioral and cultural characteristics along a spectrum between man and woman. According to the American Psychological Association (2006) approximately 1 out of 1500 people cannot be easily classified as male or female due to an intersex condition including, but not limited to Klinefelter syndrome, androgen insensitivity, Turner syndrome, vaginal or penile agenesis, 5-alpha-reductase deficiency, and Congenital adrenal hyperplasia. Some conditions are apparent at birth and parents and the child’s doctor may choose to make the decision to have a sex assignment surgery. This may be confusing to adolescents trying to conceptualize their gender particularly when surveys do not have the option that recognizes their true “biological sex.” This may explain some of the missing values or answers of “not sure,” providing clarity in the item for the participants. Having specific questions targeting transgender discrimination that were separated from biological sex would have strengthened the power of the study potentially by testing another area of discrimination., Also separating these questions would not minimize the effect of sexism on cisgender girls in the study. Although gender expression was an item on the
2019 MSS, it was not included in this study because the definition of gender expression was “your style, dress, or the way you walk or talk,” which could have been easily perceived by the participants as non-discriminatory bullying. More specific wording about gender expression in these questions/items may have prevented this issue.

It also may have been beneficial to give examples of bullying for reasons based on “race, ethnicity, or national origin,” such as making fun of your skin color, the texture of your hair, the shape of your facial features, mocking your accent, etc. Giving more context to the items may have helped the participants associate their experiences with the items. As discussed previously, adolescents are not only less developed in their identity development, but their worldviews are not as advanced. Providing clear examples of various types of discrimination, both implicit and explicit types would be helpful. This would make the survey more applicable for students in areas that do not provide education regarding sexual health, are not aware of microaggressions, or perceive them as “normal.” Clearer examples would make this instrument more accessible for students with different cognitive abilities, rather than needing to draw conclusions about their experiences on their own.

The Minnesota Student Survey also uses cross-sectional data which cannot infer causation because it is a one-time measurement of two groups. Although the test of mediation suggests a plausible causal model for how discrimination relates to identity and bullying, because the data are cross-sectional, these results only demonstrate that this theoretical model has not been ruled out. Making causal claims from this mediation analysis would require longitudinal and/or experimental data, which are not available in the MSS. Future studies should test whether discrimination causes increased substance use among adolescents with multiple marginalized identities in designs that can make stronger causal claims.
In hypothesis 2, the mean scores for individuals who were not marginalized in terms of identity were higher than those with one and even two areas of marginalized identity. These results may be due to the high rates of cisgendered girls in the study which are likely one of the marginalized identities. Previous research suggests that girls use substances less than boys in adolescence (Case, 2016) therefore the sex difference may be initially obscuring the results until individuals in the data set report 3 and 4 areas of marginalization. It is possible that the relationship is a quadratic rather than linear meaning having any one marginalized identity is protective against substance use compared to straight white boys but as areas of marginalization increases teens are at higher risk of substance use.

Finally, in large data sets like the MSS, statistically significant changes can happen with relatively small differences that may not be clinically relevant. The most questionable result in this study, in regard to clinical significance may be the results for hypothesis 2. The frequency of substance use was statistically related to marginalized identities, but the effect size was very small. The rates of substance use increased as number of marginalized identities increased, however, in absolute terms the mean score for substance abuse for students with all four levels of marginalized identities suggested that all groups reported never or very rarely using substances. Many adolescent students do not have regular access to expensive and difficult to access substances so early in their lives, making these rates lower overall. While the effect size found when testing hypothesis 1 was very small as well, this finding may still be clinically significant, as even relatively rare discrimination (as was reported even at the highest levels of identity marginalization) may have a powerful impact compared to no discrimination exposure at all. Depending on the individual and the way in which they were bullied (i.e., physical assault,
cyberbullying, microaggressions, etc.) the student may perceive even just one event as traumatic. Even one event of discrimination or bullying can have negative effects.

The results of the mediation in hypothesis 3 were both clinically significant and statistically significant. Again, the effect sizes were quite small, likely due to the impact of substance use rates. However, given the fact that the direction of the relationship between substance use and marginalized identities changed due to the impact of discrimination, suggests potentially significant clinical implications for the understanding of how discrimination relates to marginalized identity and substance use.

### Clinical Implications

This study found a direct connection between discrimination and substance use in adolescence in students with multiple marginalized identities. Understanding how to decrease substance use rates in an already at-risk population is beneficial. Therefore, policy makers and school officials should target discrimination and discriminatory bullying. Substance use and discrimination both impact mental and physical health outcomes for adolescents (Case et al., 2016; Hertz et al., 2015; Ttofi et al., 2016).

This study also contributes to research into intersectionality among adolescents. Previous research in this area using the MSS has conceptualized substance use as a dichotomous item, which distinguished people who use substances from those who did not use substances. Frequency of substance use has not been studied in previous research, partially due to low prevalence of substance use. This study discussed frequency of substance use rather than a dichotomized variable, making this study unique. Additionally, this study expands both
clinicians’ and researchers’ understanding of the experience of identity in adolescence especially for teens with multiple intersecting oppressed identities.

Holding multiple marginalized identity statuses may place teens at risk for exposure to discrimination, and these teens should be offered support as needed. Additionally, interventions targeting children who engage in discriminatory behavior might help prevent or curtail discriminatory bullying. Individuals with multiple marginalized identities are at risk for a lower quality of life, particularly when they are exposed to discrimination. Seng, Lopez, Sperlich, Hamama, and Meldrum (2012) investigated how having more than one marginalized identity affects mental health and quality of life and found that more frequent discrimination was correlated with a lower quality of life and higher rates of PTSD symptoms. At the same time, holding marginalized identity statuses also was associated with poorer quality of life and higher rates of PTSD symptoms even apart from discrimination. For example, Black women were consistently the most disadvantaged in terms of both income and education compared to other groups in this study. They were also more likely to be exposed to trauma, have Posttraumatic Stress Disorder symptoms, and experience a lower quality of life. Black and Asian/Pacific Islander women ranked racial discrimination as the most common form of discrimination. Among White and Hispanic women, gender discrimination was ranked the highest in frequency (Seng et al., 2012). Thus, interpersonal discrimination, such as bullying, may interact with other forms of minority stress to cause harm to marginalized individuals. As clinicians, having the understanding that marginalized individuals may be at increased risk to stress due to exposure to discrimination and systematic oppression should prompt us to provide greater empathy and appropriate services in response to their needs.
For adolescents specifically, exposure to discrimination may lead to disruptions in identity formation and development. When teenagers are exposed to hatred related to their identity statuses, they may experience confusion and difficulty related to being perceived as different. Disruptions in identity development may cause self-hatred, shame, embarrassment, or other negative psychological effects including depression, anxiety, and increased risk of suicide and substance use disorders (Grov et al., 2006). The results of the present study may suggest early signs of disruptions in identity formation in the participants, especially among those who experience higher frequencies of discrimination. As adolescents are beginning to form their sense of self and how they are similar and different to others, they may experience confusion or discomfort with their identity due to experienced discrimination. Teenagers may feel pressure to assimilate with in-group and reject their identity.

How adolescents cope with this discrimination is also important to manage given that they may be at higher risk for engaging in substance use due to adverse psychosocial conditions. Garnett, Masyn, Austin, Williams, and Viswanath (2015) found that teens who experienced discrimination had higher rates of depression and used distraction techniques or avoidant behavior to cope with stress 59% of the time to cope with their distress. Substance use can be used as distraction from chaotic environments or shrinking responsibilities. Similarly, substance use is often used as a temporary strategy to avoid mental health symptoms like anxiety. Given the results of Garnett et al. (2015) study as well as the present study, an increased awareness of the interaction of identity and discrimination could provide support for schools and clinicians who may be able to provide teens and children with support in coping with stress in healthy ways rather than substance use. If professionals witness students engaging in distraction techniques or avoidant behavior, these behaviors may be early warning signs for at-risk behavior like substance
use, and providers could increase their support accordingly. For example, if a student quit
playing a sport that they enjoy or is spending more time than usual in their room, it may warrant
a discussion with a mental health professional or a school counselor. The results of the current
study would support surrounding a child with social support which could be a protective factor
against substance use. In the mediation analysis, marginalized identity was negatively associated
with substance use when discrimination was not in the model, suggesting a protective nature.
Gower (2018), Eisenburg et al. (2020), and Garnett et al. (2015) all suggest that having a strong
support system, a community with shared values, and interpersonal connections within the
marginalized group are all aspects that can protect individuals from the additive stress of
discrimination and oppression.

Future Directions

Future studies in the area of intersectionality, discrimination, and substance use in youth
should consider using more diverse samples than the 2019 MSS, with a more even distribution of
White versus BIPOC students, and a larger number of sexual and gender minority students. A
nationwide study would potentially be beneficial to determine whether these results generalize to
the United States as a whole. Future studies should investigate the differences in these effects
comparing rural areas versus urban areas, public school versus private school versus detention
centers, and conservative versus liberal areas of the United States to investigate levels of
tolerance and intolerance and how these variables may affect outcomes. Societal changes are
another factor to consider that may impact discrimination and identity development. Replicating
this study following political unrest due to COVID-19, the death of George Floyd in
Minneapolis, and following the Trump presidency may affect the results. Given the results of this
study, being a marginalized person can lead to discrimination particularly if you are a racial,
gender, or sexual minority. Discrimination can also be experienced due to various other factors not examined in the current study, such as socio-economic status, weight, disability, and ethnicity. On the other hand, the mediation analysis in the present study suggests that, to some extent, being a part of a marginalized group may be a protective factor, identifying group differences in the protection against substance use.

Researchers should also continue to include sexual identity and differences in gender identity including transgender, nonbinary, genderqueer, genderfluid, and agender individuals in their research with adolescents. Examining the differences between how an individual who is genetically intersex may develop their gender identity compared to cis-gender and transgender youth could increase awareness about both intersex and differences in gender. This would be important to the research questions utilizing marginalized identity as gender identity may differ significantly in identity development compared to sexual identity or racial identity. As an individual develops and learns about their identity, it is possible that their perception about how others respond to their identity changes as well. It may be interesting to examine the changes in adolescents’ perception of discrimination as their identity development progresses over time and whether sexual and cultural education affects discrimination and self-exploration of identity. Further research is also needed to replicate and extend these findings regarding peer harassment experiences among youth in vulnerable groups. Understanding who is being targeted by bullies will further inform intervention activities. Further research is also needed to examine the identity development differences of bullies, victims of bullying, and both a victim and a bully to investigate the differences in their self-perception. In addition, there is a need for further research on the physical and mental health implications of perpetration among youth exposed to discrimination as many of the studies have utilized the adult population. Longitudinal studies
into adulthood may shed light on behaviors manifesting later in life. Future research should also substantiate the causal model of mediation tested in this cross-sectional sample. For example, experimental intervention development research targeting discrimination against marginalized adolescents could demonstrate that decreasing marginalized teens’ exposure to discrimination causes decreased substance use in multiply marginalized adolescents.

The present study, using the 2019 MSS, found that adolescents in the state of Minnesota who hold multiple marginalized identity statuses are at increased risk for both discrimination and substance use. In fact, the influence of discrimination, prejudice, inequality, bigotry, and hate negatively affects children. When discrimination is not present, being a part of a marginalized group may be a protective factor from substance use. There is no doubt that bullying, and substance use in children and adolescents leads to negative outcomes throughout the lifespan. It is hoped that the results of this study can further the conversation on managing the impact of discrimination and its associated stress.
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Dane County Youth Commission. (2012). Dane County Youth Assessment: overview report. *WI2015, Madison.*[Google Scholar]*.


National Survey on Drug Use and Health. (2023) *State Estimates Of Substance Use And Mental Disorders*. Substance Abuse and Mental Health Services Administration.


Appendix A

Resources for Teens and Young Adults

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In Crisis

Boys Town National Hotline
Serving all at-risk teens and children
www.boystown.org/hotline
800-448-3000
800-448-1833 (TDD)
Spanish-speaking counselors available and translation services for more than 140 languages

Crisis Call Center
www.crisiscallcenter.org/crisisservices.html
800-273-8255 or text ANSWER to 839863 Twenty-four hours a day, seven days a week

Crisis Text Line
www.crisistextline.org
Text MN to 741741 for free, 24/7 crisis support in the U.S.

National Suicide Hotline
www.imalive.org
800-SUICIDE (784-2433)
800-442- HOPE (4673) Twenty-four hours a day, seven days a week

National Suicide Prevention Lifeline
www.suicidepreventionlifeline.org
800-273-TALK (8255) Twenty-four hours a day, seven days a week

Psychiatric Crisis Resource Kit
http://m.appcreatorpro.com/m/treatmentadvocacycenter/5d0583d4d7/5d0583d4d7.html

The Trevor Lifeline
Crisis intervention and suicide prevention services for LGBTQ young people ages 13-24
www.thetrevorproject.org
866-4-U-TREVOR (488-7386) Twenty-four hours a day, seven days a week

AIDS and HIV

Project Inform: National HIV/AIDS Treatment Hotline
www.projectinform.org
800-822-7422 8 a.m. to 2 p.m., Monday to Friday, call-back service only (English only)

Bullying and Cyberbullying

School Safety Technical Assistance Center
Support for schools, parents and students to address bullying
www.education.mn.gov/MDE/dse/safe/bprev
651-582-8364

Stopbullying.gov
Information on how citizens can stop bullying in their communities, as well as seek help if they are being bullied
www.stopbullying.gov
Eating Disorders

**National Association of Anorexia Nervosa and Eating Disorders**
www.anad.org
630-577-1330
9 a.m. to 5 p.m., Monday to Friday

**National Eating Disorders Association**
www.nationaleatingdisorders.org
800-931-2237
8 a.m. to 4 p.m., Monday to Friday

**Emotional Support**

**Anxiety in Teens**
Online mental health magazine for teens dealing with anxiety disorders and other mental health issues
https://anxietyinteen.org

**Change to Chill**
Provides free episodes and training for youth to help them “chill out” and manage stress
www.changetochill.org

**Depression and Bipolar Support Alliance**
www.dbsalliance.org
800-826-3632

**Mental Health America (MHA)**
For a referral to specific mental health service or support program in your community
www.mentalhealthamerica.net
800-273-TALK (8255)
Twenty-four hours a day, seven days a week
Text MHA to 741741

**Mental Health First Aid**
Comprehensive training that involves teaching first hand response to a mental health emergency
www.mentalhealthfirstaid.org/cs/take-a-course/course-types/youth/

**Minnesota Association of Children’s Mental Health**
Provide fact sheets on 14 different common mental health disorders with symptoms and strategies to implement change within the classroom
www.macmh.org/publications/mental-health-fact-sheets/

**Minnesota LGBTQ+ Network**
Organization of mental health professionals seeking the advancement of the community, as well as resource platform for LGBTQ+ individuals seeking mental health services
www.lgbttherapists.org

**National Institute of Mental Health Information Center**
www.nimh.nih.gov/site-info/contact-nimh.shtml
866-615-6464 (toll-free)
866-415-8051 (TTY toll-free)
7:30 a.m. to 4 p.m., Monday to Friday (English and Spanish)

**Prairie Care**
Provides psychiatric care and educational services for families
www.prairie-care.com

The National Alliance of Mental Illness (NAMI)
Nation’s largest grassroots mental health organization dedicated to building better lives for the millions of Americans affected by mental illness
www.nami.org/About-NAMI
800-950-NAMI
9 a.m. to 5 p.m., Monday to Friday
Text NAMI to 741741

To Write Love on Her Arms
Non-profit movement dedicated to presenting hope and finding help for people struggling with depression, addiction, self-injury, and suicide
https://twloha.com

Washburn Center for Children
Provides outpatient and family therapy, assessments, intensive therapy group sessions, and at home services.
https://washburn.org/

Grief and Loss

Tragedy Assistance Program for Survivors (TAPS)
www.taps.org
800-959-TAPS (8277)
Twenty-four hours a day, seven days a week

Lesbian, Gay, Bisexual, Transgender and Queer (LGBTQ) Support

GLBT National Youth Talkline
www.glbthotline.org/talkline.html
800-246-PRIDE (7743)
3 p.m. to 11 p.m., Monday to Friday
11 a.m. to 4 p.m., Saturday

It Gets Better Project
Inspires people across the globe to share their stories and remind the next generation of LGBTQ+ youth that hope is out there, and it will get better.
https://itgetsbetter.org/

Minnesota LGBTQ+ Network
Organization of mental health professionals seeking the advancement of the community, as well as resource platform for LGBTQ+ individuals seeking mental health services
http://lgbttherapists.org/

Trans Lifeline
www.translifeline.org
877-565-8860
This hotline is staffed by volunteers who are all trans identified and educated in the range of difficulties transgender people experience. Operators are generally available 24 hours a day, seven days a week.

Other

National Center for Victims of Crime
www.victimsofcrime.org
Multi-language service available
800-FYI-CALL (394-2255)

**National Runaway Safeline**
www.1800runaway.org
800-RUNAWAY (786-2929)
Twenty-four hours a day, seven days a week

**S.A.F.E. Alternatives**
https://selfinjury.com/
800-DONT-CUT (800-366-8288)

**Thursday’s Child National Youth Advocacy Hotline**
www.thursdayschild.org
800-USA-KIDS (800-872-5437) Twenty-four hours a day, seven days a week

**Young Dance**
Encourages youth to build body and spirit through the creative art of dance
www.youngdance.org

**Youth Move National**
National organization devoted to improving services and systems that support positive growth and development
www.youthmovenational.org

**Rape, Sexual Violence, and Domestic Violence**

**Child Help USA National Child Abuse Hotline**
www.childhelpusa.org
800-4-A-CHILD (422-4453)
Twenty-four hours a day, seven days a week

**love is respect**
www.loveisrespect.org
National Teen Dating Abuse Hotline
(866) 331-9474
Twenty-four hours a day, seven days a week

**National Domestic Violence Hotline**
www.ndvh.org
800-799-SAFE (7233)
Twenty-four hours a day, seven days a week

**Rape, Abuse, and Incest National Network**
www.rainn.org
800-656-HOPE (4673)
Twenty-four hours a day, seven days a week

**Safe Horizon’s Rape, Sexual Assault & Incest Hotline**
www.safehorizon.org
Domestic Violence Hotline: 800-621-HOPE (4673)
Crime Victims Hotline: 866-689-HELP (4357)
Rape, Sexual Assault & Incest Hotline: 212-227-3000
TDD phone number for all Hotlines: 866-604-5350
Twenty-four hours a day, seven days a week
School Violence
National Center for Mental Health Promotion and Youth Violence Prevention
www.promoteprevent.org
8 a.m. to 4 p.m., Monday to Friday
SPEAK UP
www.bradyca.mpaign.org/our-impact/campaigns/speak-up
866-SPEAK-UP (773-2587)
Twenty-four hours a day, seven days a week

Sexual Health
American Sexual Health Association
www.ashasexualhealth.org
919-361-8488
7 a.m. to 7 p.m., Monday to Friday
Centers for Disease Control and Prevention (CDC)
www.cdc.gov/sexualhealth
800-CDC-INFO (232-4636)
Twenty-four hours a day, seven days a week
Planned Parenthood National Hotline
www.plannedparenthood.org
800-230-PLAN (7526) – for routing to local resources
Twenty-four hours a day, seven days a week

Substance Abuse
Minnesota Adult & Teen Challenge
Restoring hope to teens and adults struggling with drug and alcohol addiction
www.mntc.org
National Institute on Alcohol Abuse & Alcoholism
www.niaaa.nih.gov
800-662-HELP (4357)
Twenty-four hours a day, seven days a week

Suicide
Crisis Call Center
http://crisiscallcenter.org/crisisservices.html
800-273-8255
Twenty-four hours a day, seven days a week
Text ANSWER to 839863
Crisis Text Line
www.crisistextline.org
Text MN to 741741 for free, 24/7 crisis support in the U.S.
National Suicide Hotline
www.hopeline.com/
800-SUICIDE (784-2433)
800-442-HOPE (4673)
Twenty-four hours a day, seven days a week
National Suicide Prevention Lifeline
www.suicidepreventionlifeline.org/
800-273-TALK (8255)
Twenty-four hours a day, seven days a week

Teen Parenting

Baby Safe Haven
Safe Haven Infant Protection Laws enable a person to give up an unwanted infant anonymously. As long as the baby has not been abused, the person may do so without fear of arrest or prosecution.
www.safehaven.tv/states
Confidential toll free hotline: 888-510-BABY (2229)

Boys Town National Hotline (Parenting)
Serving all at-risk teens and children
www.parenting.org
800-448-3000
Twenty-four hours a day, seven days a week

Postpartum Support International
http://postpartum.net/
800-944-4PPD (4773)
Calls returned within 24 hours
Text 508-894-9453

PPD Moms
Postpartum Depression Resources
www.1800ppdmoms.org
800-PPD-MOMS (800-773-6667)

Teen Pregnancy

American Pregnancy Helpline
www.thehelpline.org
866-942-6466
Twenty-four hours a day, seven days a week

Birthright International
www.birthright.org
800-551-4900
Twenty-four hours a day, seven days a week

Planned Parenthood
www.plannedparenthood.org
800-230-PLAN (7526) – for routing to local resources
Twenty-four hours a day, seven days a week
Appendix B

MSS Data Request Form 2019

Today’s date (only today’s date will be accepted):
04/01/2022

Requester Information:
First Name
Ashley
Last Name
Thomas
Institution, agency or organization
Augsburg University
Title/role
Doctoral Student
Phone number
6122366638
Email address (please type carefully)
thomasa1@augsburg.edu

Are you affiliated with an institution of higher education?
Yes

Please upload a copy of the Institutional Review Board’s approval of your research. If your research using this dataset is exempt from review, please provide the rationale in the comments box below.

[Attachment: Approval_Letter_for_Ashley_Thomas_2022-07-02_- 3-30-22.docx]

Comments:

1. Which year(s) are you requesting? (Check all that apply)
   2019
2. What type of file are you requesting?
   Individual year (includes one year of data per file)
3. What level of data are you requesting? (Check all that apply)
   Statewide data (with race variables)
4. Additional information about your request, if needed.
   Project title: THE COMBINED EFFECTS OF DISCRIMINATION AND HOLDING MULTIPLE INTERSECTING MINORITY IDENTITIES ON SUBSTANCE USE IN ADOLESCENTS
Other investigators include: Dr. Marcia Bennett and Dr. Jim Theisen, both Faculty with Augsburg University in the Clinical Psychology Program. Dr. Berman is my Clinical Research Project (CRP) chair, and Drs. Theisen and Bennett are on my CRP committee.

5. In which format would you like to receive the data?

SPSS

6. By what date do you hope to receive the data? (Please allow at least four weeks.)

05/01/2022

What is the purpose of analyzing the dataset (or the purpose of your study)?

Teens and children are at increased risk for mental health concerns and identity issues, especially if they are exposed to discrimination and if they hold oppressed identity statuses [1]. Most studies on the impact of intersecting minority identities on adolescents analyze their relation to depression and anxiety [2]. However, studies also suggest that substance use generally decreases the overall well-being of students and is hazardous to their physical and mental health [2, 3, 4, 5]. Hertz, Everett-Jones, Barrios, David-Ferdon and Holt (2015) [6] found that exposure to bullying increased the probability that adolescents would engage in substance use. Bullying in schools based on race, gender, and sexual orientation have historically been studied independently with recent research exploring the combined effects of intersecting identities in youth [7]. There is evidence that youth with multiple oppressed identities experience higher rates of bullying and discrimination than youth without multiple intersecting marginalized identities [7, 8]. Research also suggests that substance use rates are higher when youth hold more intersecting marginalized identities compared to youth that belong to predominately majority-status identities [9, 10]. However, current research on intersectionality is heavily focused on the adult experience rather than the experiences of adolescents. Also, few studies investigate the relationships between intersectionality, discrimination, and substance use in youth. This study will address the combined effects of discrimination and belonging to multiple minority identities have on substance use among Minnesota youth.

Specific Aim: Identify how holding multiple intersecting identities relates to experiences of discrimination and youth substance use.

Hypothesis #1: Youth who are members of more marginalized identity groups will experience higher rates of discrimination than youth with fewer marginalized identities.

Hypothesis #2: Youth with more intersecting marginalized identities will also engage in more substance use than youth with fewer marginalized identities.

Hypotheses #3: The relationship between multiple intersecting oppressed identity statuses and substance use will be mediated by greater perceived discrimination among students with more oppressed identity statuses.

How will the findings be reported?

The final report with findings will be disseminated in the following ways: possible publication in scholarly/professional journals, cooperating agency/organization, paper to Faculty for completion of degree requirements, and the Lindell Library at Augsburg University.

7. The Minnesota Student Survey Interagency Team would like to be informed of the latest findings obtained through use of the survey data. Do you agree to send us copies of articles, reports, and other publications when they are released? (They can be emailed to MDE.StudentSurvey@state.mn.us.)

Yes, I agree to send copies of articles, report, and other publications when they are released.
Signature of requester

Signature of: Ashley Thomas
Appendix C

Institutional Review Board
Augsburg University
2211 Riverside Ave.
Minneapolis MN 5545

March 30 2022

To: Ashley Thomas

I am pleased to inform you that the IRB has approved your application for “THE COMBINED EFFECTS OF DISCRIMINATION AND HOLDING MULTIPLE INTERSECTING MINORITY”.

Your IRB approval number that should be noted in your written project and in any major documents alluding to the research project is:

Approval Number: 2022-07-02

Ongoing IRB review and approval for this activity are not needed. However, this determination applies only to this IRB submission and its activities. It does not apply if any material changes should be made. If changes are made and there are questions about whether IRB review is required, please submit information about those changes to the IRB for a determination. Please inform the IRB of any changes in your address or e-mail.

I wish you success with your project. If you have any questions, you may contact me at IRB@augsburg.edu.

Sincerely,

Milda

Milda K. Hedblom, J. D., Ph.D.
Augsburg University IRB Chair
Appendix D

Model Notification of Rights Under the Protection of Pupil Rights Amendment (PPRA)

PPRA affords parents of elementary and secondary students certain rights regarding the conduct of surveys, collection and use of information for marketing purposes, and certain physical exams. These include, but are not limited to, the right to:

- **Consent** before students are required to submit to a survey that concerns one or more of the following protected areas (“protected information survey”) if the survey is funded in whole or in part by a program of the U.S. Department of Education (ED)—

  1. Political affiliations or beliefs of the student or student’s parent;
  2. Mental or psychological problems of the student or student’s family;
  3. Sex behavior or attitudes;
  4. Illegal, anti-social, self-incriminating, or demeaning behavior;
  5. Critical appraisals of others with whom respondents have close family relationships;
  6. Legally recognized privileged relationships, such as with lawyers, doctors, or ministers;
  7. Religious practices, affiliations, or beliefs of the student or student’s parent; or
  8. Income, other than as required by law to determine program eligibility.

- **Receive notice and an opportunity to opt a student out of**—

  1. Any other protected information survey, regardless of funding;
  2. Any non-emergency, invasive physical exam or screening required as a condition of attendance, administered by the school or its agent, and not necessary to protect the immediate health and safety of a student, except for hearing, vision, or scoliosis screenings, or any physical exam or screening permitted or required under State law; and
  3. Activities involving collection, disclosure, or use of personal information collected from students for marketing or to sell or otherwise distribute the information to others. (This does not apply to the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to, students or educational institutions.)

- **Inspect**, upon request and before administration or use—

  1. Protected information surveys of students and surveys created by a third party;
  2. Instruments used to collect personal information from students for any of the above marketing, sales, or other distribution purposes; and
  3. Instructional material used as part of the educational curriculum.

These rights transfer from the parents to a student who is 18 years old or an emancipated minor under State law.

[School District will/has develop[ed] and adopt[ed]] policies, in consultation with parents, regarding these rights, as well as arrangements to protect student privacy in the administration of protected information surveys and the collection, disclosure, or use of personal information for marketing, sales, or other distribution purposes. [School District] will directly notify parents of these policies at least annually at the start of each school year and after any substantive changes. [School District] will also directly notify, such as through U.S. Mail or email, parents of students who are scheduled to participate in the specific activities or surveys noted below and will provide an opportunity for the parent to opt his or
her child out of participation of the specific activity or survey. [School District] will make this notification to parents at the beginning of the school year if the District has identified the specific or approximate dates of the activities or surveys at that time. For surveys and activities scheduled after the school year starts, parents will be provided reasonable notification of the planned activities and surveys listed below and be provided an opportunity to opt their child out of such activities and surveys. Parents will also be provided an opportunity to review any pertinent surveys. Following is a list of the specific activities and surveys covered under this direct notification requirement:

- Collection, disclosure, or use of personal information collected from students for marketing, sales, or other distribution.
- Administration of any protected information survey not funded in whole or in part by ED.
- Any non-emergency, invasive physical examination or screening as described above.

Parents who believe their rights have been violated may file a complaint with:

Student Privacy Policy Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202
Appendix E

PPRA Model Notice and Consent/Opt-Out for Specific Activities

[LEAs should adopt the following model form as appropriate]

The Protection of Pupil Rights Amendment (PPRA), 20 U.S.C. § 1232h, requires [School District] to notify you and obtain consent or allow you to opt your child out of participating in certain school activities. These activities include a student survey, analysis, or evaluation that concerns one or more of the following eight areas (“protected information surveys”):

1. Political affiliations or beliefs of the student or student’s parent;
2. Mental or psychological problems of the student or student’s family;
3. Sex behavior or attitudes;
4. Illegal, anti-social, self-incriminating, or demeaning behavior;
5. Critical appraisals of others with whom respondents have close family relationships;
6. Legally recognized privileged relationships, such as with lawyers, doctors, or ministers;
7. Religious practices, affiliations, or beliefs of the student or the student’s parent; or
8. Income, other than as required by law to determine program eligibility.

This parental notification requirement and opt-out opportunity also apply to the collection, disclosure or use of personal information collected from students for marketing purposes (“marketing surveys”). Please note that parents are not required by PPRA to be notified about the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to, students or educational institutions. Additionally, the notice requirement applies to the conduct of certain physical exams and screenings. This includes any non-emergency, invasive physical exam or screening required as a condition of attendance, administered by the school or its agent, and not necessary to protect the immediate health and safety of a student. This does not include hearing, vision, or scoliosis screenings, or any physical exam or screening permitted or required by State law.

Following is a schedule of activities requiring parental notice and consent or opt-out for the upcoming school year. This list is not exhaustive and, for surveys and activities scheduled after the school year starts, the [School District] will provide parents, within a reasonable period of time prior to the administration of the surveys and activities, notification of the surveys and activities, an opportunity to opt their child out, as well as an opportunity to review the surveys. (Please note that this notice and consent/opt-out transfers from parents to any student who is 18 years old or an emancipated minor under State law.)

[The following are only examples of PPRA notices and consent/opt-outs that may be used by school districts for protected information surveys or marketing surveys. School districts will need to tailor their notices and consent/opt outs depending on their specific activities, as required by PPRA.]
[For surveys that contain questions from one or more of the eight protected areas noted above:]

Date: On or about [Add date.]
Grades: Eight and Nine
Activity: ABC Survey of At-Risk Behaviors.

Summary: This is an anonymous survey that asks students questions about behaviors such as drug and alcohol use, sexual conduct, violence, and other at-risk behaviors. The survey also asks questions of a demographic nature concerning family make-up, the relationship between parents and children, and use of alcohol and drugs at home.

[Note to schools: We recommend that the notice inform parents that they may submit a request to a specified school official or office in order to review the protected information survey and that the school official or office will notify the parent of the time and place where the parent may review this. A parent has the right, upon request, to review this protected information survey.]

[Note to schools: If the survey in question is administered as part of an applicable program of the U.S. Department of Education (ED program), such as through an ED-administered grant program and the student is required to submit to the survey, prior “active” consent is required, as in the first example. If the survey is not administered as part of an ED program or the student is not required to submit to the survey, then the school should use the second example of an opt-out notice.]

Consent [only for protected information surveys that are administered as part of an ED program and to which the student is required to submit]: A parent must sign and return the consent below no later than [insert return date] so that your child may participate in this survey.

[Sample consent:

I [parent’s name] give my consent for [child’s name] to take the ABC Survey of At-Risk Behaviors on or about [Add date].

_________________________
Parent’s signature

Please return this form no later than [insert date] to the following school official: [Provide name and mailing address.]

Opt-out [for any protected information survey that is not administered as part of an ED program or to which the student is not required to submit]: A parent must sign and return this opt-out form no later than [insert return date] [OR] Contact [school official] at [telephone number, email, address, etc.] no later than [date] if you do not want your child to take the ABC Survey of At-Risk Behaviors on or about [Add date].
[For marketing surveys:]

[Note to schools: Certain information that would not generally be considered harmful or an invasion of privacy if disclosed – such as names, addresses, and telephone listings – may be designated as “directory information” in a public notice under the Family Educational Rights and Privacy Act (FERPA) and subsequently disclosed if the parents or eligible students do not opt out of the disclosure. Instead of using a format similar to that set forth in these Model Notices, schools may meet PPRA notice requirements for specific marketing activities that involve only the disclosure of designated “directory information” by allowing parents or eligible students to opt out of the disclosure of the designated “directory information” at the start of each school year; if the parents or eligible students opt-out of the disclosure of their children’s or their “directory information,” then the school may not disclose their children’s or their “directory information” for marketing activities. In addition to the “directory information” notice discussed above, under applicable PPRA requirements, please note, however, that school districts must also directly notify parents of the specific or approximate dates during the school year when the marketing activities are scheduled or expected to be scheduled.]

Date: [Add date.]
Grades: Nine through Twelve
Activity: Student-Based Commercial Services
Summary: [School] collects and discloses, or allows businesses to collect, use, or disclose personal information collected from students, including names, addresses, telephone listings and Social Security numbers. These businesses provide student-based products and services, such as computer equipment, sports clothing, school jewelry, and entertainment products.

[Note to schools: If this collection of personal information from students involves a marketing survey, we recommend that the notice inform parents that they may submit a request to specified school official or office to review the marketing survey and that specified school official or office will notify the parent of the time and place where the parent may review this. A parent has the right, upon request, to review this marketing survey before it is administered or distributed to a student.]

Opt-out: A parent must sign and return this opt-out form no later than [insert return date]
[OR] Contact [school official] at [telephone number, email, address, etc.] no later than [date] if you do not want your child to participate in this marketing activity on [Add date].

Consent: A parent also must sign and return the attached consent form no later than [insert return date] in order for your child’s Social Security number to be disclosed for this marketing activity.

[Sample consent:]

I [parent’s name] give my consent for [child’s name] to be disclosed to businesses that provide student-based products and services, such as computer equipment, sports clothing, school jewelry, and entertainment products, on [Add date].
Parent’s signature

Please return this form no later than [insert date] to the following school official:  [Provide name and mailing address.]

[Note to schools: While some of the information – names, addresses, and telephone listings – may be designated and disclosed as “directory information” under the Family Educational Rights and Privacy Act (FERPA), schools that permit marketing activities that involve the disclosure of students’ Social Security numbers may not use an opt-out procedure and must obtain prior written consent in accordance with § 99.30 of the FERPA regulations.]
Appendix F

What is the Minnesota Student Survey (MSS)?

The Minnesota Student Survey (MSS) is one of the longest-running youth surveys in the nation. It is a triennial survey that began in 1989. The survey is an anonymous statewide school-based survey conducted to gain insights into the world of students and their experiences. The next MSS will be administered between January and June 2022 to students in grades five, eight, nine and 11.

Why is the survey important?

The MSS is the primary source of comprehensive data on youth at the state, county and local level in Minnesota and is the only consistent source of statewide data on the health and well-being of youth from smaller population groups, such as racial or ethnic groups. It provides valuable information about issues vital to the health, safety and academic success of young people. The survey results have proven to be a dynamic vehicle in bringing the youth voice into decisions made by youth programs, schools, communities and state agencies.

How is information from the survey results used?

School districts, local public health agencies and community nonprofits use local data to hold community forums and stimulate discussion about the needs of youth, to plan programs and to obtain grant funding. State agencies use the results to monitor trends, to assess the extent of disparities among population groups, to obtain federal and state funding and to assist local communities and schools.

Who administers the MSS?

The survey is a collaboration between local schools and four state agencies: the Minnesota Departments of Education, Health, Human Services and Public Safety. The state agencies develop the survey content, monitor data quality, analyze data and report results. Schools administer the survey to their students.

Who takes the survey?

All schools are invited to participate in the survey. This includes public, nonpublic, charter and tribal schools. It also includes alternative learning centers and juvenile correctional facilities. Fifth-, eighth-, ninth- and 11th-grade students take the survey, but schools may add additional grades, if desired.

Do all schools participate? Do all students take the survey?

The survey is voluntary for school districts and students. School districts have the option to not participate in the survey. Parents can choose not to have their children participate. Students themselves can decide not to take the survey. In every survey administration, at least 81 percent of school districts have participated in the survey.
How many students took the survey in 2019? When is the next survey?

In 2019, more than 170,000 public school students participated in the survey, including 66 percent of fifth-grade students, 68 percent of eighth-grade students, 66 percent of ninth-grade students and 54 percent of 11th-grade students. The next MSS will be administered between January and June 2022.

What questions are included on the survey?

The survey asks students about their activities, opinions, behaviors and experiences. Students respond to questions on school climate, bullying, out-of-school activities, healthy eating, emotional health, substance use and connections with school and family. Questions about sexual behaviors are asked only of high school students. All responses are anonymous.

Are the same questions asked every three years?

Yes and no. Some questions are asked every three years to identify trends in student responses over time. However, as new issues emerge and old issues become less relevant, questions are reviewed for their usefulness. The MSS Research Team carefully examines all survey items every three years and gathers feedback from stakeholders. Since the MSS is already a lengthy survey, new items must have clear rationale and purpose.

How is the survey given?

In 2019, the MSS was administered entirely online. Students could complete the survey on a desktop computer, laptop, tablet (e.g., iPad) or netbook (e.g., Chromebook). The online survey met federal and state accessibility requirements and included a text-to-speech option.

Where can survey results be found? How are data files requested?

State, county and district results for 2013, 2016 and 2019 are available in online interactive reports and downloadable PDF tables.

School-level results (in PDF format) may be available upon request by emailing mde.studentsurvey@state.mn.us.

State results by educational setting (since 2007), racial/ethnic group (since 2007), and sexual orientation (2019) are available on the Minnesota Department of Health website Individual-level data files may be requested in order to conduct additional statistical analysis. The requestor must complete the MSS Data Request Form and User Agreement.