Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.
Signature:

Kelsey Miller	4/22/2024
Signature	Date

Classroom to Clinic: An investigation of experiences of social support in high school and health risk behavior among transgender young adults living in the Southern U.S.

By

Kelsey Miller

Master of Public Health

Behavioral, Social, and Health Education Sciences

_____

Don Operario, PhD

Committee Chair

_____

Robin McGee, MPH, PhD

Committee Member

Classroom to Clinic: An investigation of experiences of social support in high school and health risk behavior among transgender young adults living in the Southern U.S.

By

Kelsey Miller

B.S., Bachelor of Science, Georgia College & State University, 2018

Thesis Committee Chair: Don Operario, PhD

An abstract of

A thesis submitted to the Faculty of the

Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of

Master of Public Health

in Behavioral, Social, and Health Education Sciences

2024

Abstract

Classroom to Clinic: An investigation of experiences of social support in high school and health risk behavior among transgender young adults living in the Southern U.S.

By Kelsey Miller

Transgender young adults engage in more risky health behaviors compared to their cisgender peers. The Minority Stress Model posits that minoritized populations, such as trans young adults, endure excess stress, which translates to poor health behaviors and outcomes. The current study applies this model to investigate if experiences of social support in high school impact health risk behavior among trans young adults living in the Southern United States. Approximately 40% of trans adults live in the South and face a great amount of anti-trans policies. Trans participants ages 18-25 were sampled from the LGBTQ+ 2021 Southern Survey. IBM SPSS Statistics was used to run crosstabs and binary logistic regressions to examine associations between social support experiences in high school and health risk behavior in young adulthood, adjusting for racial identity and type of high school attended. Trans young adults were found to be more likely to have had an HIV test in the last year if there was a Gay-Straight Alliance (GSA) at their high school (aOR=5.33), if they felt that their teachers and faculty supported LGBTQ+ students (aOR=2.90), and if they felt that their teachers and faculty were supportive of GSAs (aOR=3.46). Trans young adults were found to be more likely to use marijuana if they were denied access to appropriate bathrooms in high school (aOR=2.25) and less likely to use marijuana if they were the target of rumors in high school (aOR=0.48). Strengths of this study include the use of recently collected data, age stratification, and its individuality of potentially being the only study on these variables. Limitations include the limited sample size, lack of a diverse sample, and lack of specificity in the measures. The results of this study prompt public health action through the support of high school GSAs and training of teachers and faculty to support trans students. Future research on social support and health risk behavior among the trans population may benefit from expanding the scope of risk behaviors and by continuing to explore the Southern United States context.

Classroom to Clinic: An investigation of experiences of social support in high school and health risk behavior among transgender young adults living in the Southern U.S.

By

Kelsey Miller

B.S., Georgia College & State University, 2018

Thesis Committee Chair: Don Operario, PhD

A thesis submitted to the Faculty of the

Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of

Master of Public Health

in Behavioral, Social, & Health Education Sciences

In 2024

ACKNOWLEDGEMENTS

I want to acknowledge my social support who encouraged me throughout this study. To my thesis committee, Don and Robin, thank you for guiding me through my thesis process and for teaching me about aspects of research I hadn't considered before. To Dr. Giacomo Negro and his team at the LGBTQ Institute, thank you for your support in my research and for graciously allowing me to use your 2021 survey data for my thesis. This study would not have been possible without the participants of the 2021 Southern Survey. To every single participant, I want to thank you for being vulnerable with your life experiences to contribute to scientific research. Lastly, I want to thank my Mom, Dad, Tommy, Vic, Mahnoor, Savannah, Sang, and many other loved ones for the mental health support and for supporting my passion for trans health.

TABLE OF CONTENTS

INTRODUCTION

Transgender young adults engage in more risky health behaviors compared to their cisgender peers (Salvatore & Daftary-Kapur, 2020; Kennedy et al., 2022). High-risk health behaviors can be defined as actions that increase the risk of developing disease or sustaining injury, which may subsequently lead to social problems, disability, or death (Tariq & Gupta, 2023). An estimated 0.5%-1% of the United States adult population is trans (Herman et al., 2023; Jones, 2023), with approximately 40% residing in the South (Herman et al., 2023). Because of their gender minority status, this community is subjected to multiple, unique social stressors faced by minority groups (Meyer, 2003). Examples of distal minority stressors include a lack of interpersonal social support (Kennedy et al., 2022), an absence of supportive community spaces (Baams & Russell, 2020), and experience of discriminatory events due to their gender identity (Casey et al., 2019). Proximal minority stressors are internalized beliefs that are subject to an individual trans person's perceptions (Meyer, 2003), such as feeling unsafe in public spaces and avoidance of gender-segregated bathrooms (Kosciw et al., 2019). These life experiences culminate in a higher prevalence of poor health behaviors and outcomes among trans people compared to cisgender people.

There is a plethora of research that documents health risk factors among trans populations, especially among trans young people. For example, there are significant disparities in HIV testing (Sevelius et al., 2020), substance use (Kennedy et al., 2022), and COVID-19 vaccination hesitancy (Garg et al., 2021) among the young adult trans population. Transgender high school students also engage in similar risky health behaviors. Recent literature suggests that social support experiences in high school through faculty and students (Poteat et al., 2021), the presence and support of a Gender-Sexuality Alliance (Sutherland, 2019), and the reduction of

discrimination may operate as protective against these negative health behaviors (Casey et al., 2019). The current study explored how social support in high school may impact risk-taking health behavior in trans young adults living in the Southern United States. Given the literature on the impact of social support among trans youth and young adults, the current study posited that high school experiences of social support among trans youth would result in health promotion behaviors in young adulthood.

Problem Statement

According to the latest estimations, the number of Americans identifying as LGBTQ is steadily rising (Jones, 2024). Data from Gallop shows that the younger the generation, the more likely they are to identify as LGBTQ. While 0.5%-1% of the general adult population are trans, 2.1% of Generation Z people are trans (Jones, 2024). Therefore, studies must be produced to better understand and support young trans people to prevent adverse health outcomes as they emerge into adulthood.

The Southern United States context is salient in the production of trans health knowledge as 40% of the American trans population lives in the Southern region (Herman et al., 2023). Despite the area being the most trans populated area of the United States, anti-trans bills are proposed more than any other region. Within the first five months of 2024, 547 anti-trans bills were introduced and approximately 50% currently or will soon affect the lives of trans Americans in the South (Trans Legislation Tracker, n.d.). As explained by the Minority Stress Model, minority stress experiences manifest from discriminatory experiences to negative health outcomes. Trans young adults are at a significantly higher risk for engaging in risky health behaviors, including a higher risk of contracting HIV (Stutterheim et al., 2021), developing severe or fatal COVID-19 symptoms (McNaghten et al., 2022), using drugs heavily (Cotaina et

al., 2022; Kennedy et al., 2022; Sawyer et al., 2022), and misusing prescription medications to get high (Cotaina et al., 2022) compared to cisgender young adults. The current study hypothesizes that these detrimental health outcomes may be prevented through high school experiences of social support.

Significance of the Study

Literature on the influence of social support among trans high school students and health risk behavior among trans young people is ever-growing. Worldwide, studies are emerging on the significance of familial and peer support on the promotion of mental health, well-being, and resilience among trans adolescents and youth (Alanko & Lund, 2019; Selkie et al., 2020; Andrzejewski et al., 2020; London-Nadeau et al., 2023). The literature pertaining to multiple health risk behaviors among trans young adults is more difficult to locate. Most studies in this area sample youth and young adults, with participant ages often ranging from middle school to mid-twenties (Johns et al., 2018; Tordoff et al., 2022). However, studies with narrower age criteria involving those above 18 years of age may be found by searching for specific health risk behaviors such as addiction prevalence (Ruppert et al., 2021) or attitudes toward HIV prevention (Wood et al., 2017).

Yet few studies have explored the concept of high school experiences making a lasting change into emerging adulthood. A mixed methods study was published in 2010 which delved into family acceptance in LGBTQ adolescents and how it impacted the health of LGBTQ young adults (Ryan et al., 2010). Another study published in 2011 explored teenage school victimization and young adult risk behavior and psychosocial health among LGBTQ young adults (Rusell et al., 2011). While these studies offer great insight into this subject area, the culture of LGBTQ rights and beliefs has changed dramatically since publication. Sexual minority

young adults were the main focus of both of the studies, as less than 10% of the samples identified as transgender (Ryan et al., 2010); Russell et al., 2011).

The current study differs from the literature cited above because of the age criteria of the sample, the amplification of transgender young adults from the Southern United States, and the use of data collected from 2020 to 2021. The sample age range is limited to 18-25 years to increase specificity and generalizability. Data sourced by the LGBTQ Institute Southern Survey is utilized to amplify trans voices who are often absent from social support and risk behavior literature. The recent collection of the survey data captures the ever-changing social and political climate of the early 2020s.

Overview of Southern Context & Theoretical Framework

Due to the American South being an area highly populated by trans people in the United States (Herman et al., 2023), the current study utilizes the 2021 LGBTQ Institute Southern Survey. The LGBTQ Institute collected data from LGBTQ people 18 years or older who currently reside in the designated 14 Southern States: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The 2021 Southern Survey includes eight sections that gather data on high school experiences, as well as health and healthcare experiences. Grounded in the Minority Stress Model theory, the current study aims to investigate how access to social support resources in the high school context may prevent transgender young adults living in the Southern United States from engaging in risky health behaviors in young adulthood. Constructs of the Minority Stress Model are applied to contextualize the distinctive stress of having a minority identity and how social support can act as a coping resource, leading to more positive health outcomes. Distal and proximal minority stress processes among trans young adults are

investigated in the literature review. The current study focuses on the quantitative analysis of social support as a coping resource and health behavior outcomes using crosstabs and binary logistic regressions.

LITERATURE REVIEW

This research study seeks to explore the impact of experiences of social support in high school and health risk behaviors among trans young adults. This review outlines published literature on health risk behaviors among trans young adults. The impact of discrimination against trans high school students is addressed, along with social support through peers, teachers, faculty, and safe spaces. The specific context of the Southern United States is examined in relation to these health factors, as well as the rationale for using the 2021 LGBTQ Institute Southern Survey. An explanation of the origin, rationale for use, and applied constructs of the Minority Stress Model are outlined. Lastly, the existing literature surrounding social support in high school and risky health behaviors in emerging adulthood is reviewed.

Risky Health Behaviors in Trans Young Adults

Emerging adults engage in high rates of risk-taking, and trans young adults report even higher rates (Rivers et al., 2018; Salvatore & Daftary-Kapur, 2020). While exploration and experimentation are common during this life stage, risky behavior can cause harm to oneself and others (Salvatore & Daftary-Kapur, 2020). For example, trans youth are more likely than their cisgender and non-heterosexual peers to drunk drive and attempt suicide (Rivers et al., 2018; Salvatore & Daftary-Kapur, 2020). Due to the staggering risky behavior disparity among trans young adults, it is imperative to explore behaviors such as substance use, alcohol use, and disease prevention patterns in this population.

Growing research shows that the trans adult population is disproportionately affected by HIV, especially among trans women (Gass et al., 2021). Recent prevalence estimations of HIV among American trans women are close to 14%, over 45 times the prevalence found in the general American adult population (Reback et al., 2023). Studies show that lacking social support, including social rejection and stigma, contributes to this jarring health disparity (Gass et al., 2021). HIV testing in trans adults remains low, as approximately half to two-thirds of trans adults have never tested for HIV (Olakunde et al., 2022). Low perception of risk and fear of enduring HIV-related stigma are major factors in the low uptake of HIV testing in this population (Olakunde et al., 2022).

The COVID-19 pandemic greatly impacted minoritized populations, including the trans population. This group is at a higher risk of facing severe COVID-19 symptoms and complications, and death due to social factors related to minority stress. For instance, trans young adults have a greater incidence of chronic illnesses and are more likely to live in housing that prevents social distancing (Ascha et al., 2023). Despite these barriers, vaccination rates are reportedly comparable to or are higher among trans people compared to cisgender people. This topic must be investigated further as COVID-19 vaccine confidence was expected to be low among trans people due to a long history of discrimination in healthcare settings and difficulty in accessing healthcare (D'Angelo et al., 2021).

The use of various drugs is a common risky health behavior among trans people, leading to an increased risk of developing substance addictions (Ruppert et al., 2021). Compared to cisgender young adults, trans young adults are 2.7 times more likely to report lifetime cigarette smoking and are 4.2 times more likely to report smoking cigarettes in the last month (Ruppert et

al., 2021). Lifetime use of marijuana is twice as high among trans young adults, and use in the last 30 days is nearly three times higher compared to cisgender peers (Ruppert et al., 2021).

Transgender students are also more likely to use illicit substances, including cocaine, methamphetamines, and inhalants, than cisgender peers (De Pedro et al., 2017). Presently, little is known about the prevalence of prescription medication misuse in the trans population. However, the few existing published studies involving trans participants have emphasized that trans women are at a high risk of misuse; one study reported that 8% of trans women misuse opioid pain medication in the past year, nearly twice that of the general U.S. population (Hughto et al., 2021). Overall, substance addictions are more prevalent among trans people (Ruppert et al., 2021). However, the extent of the disparity varies among sub-sections of the trans populations (Ruppert et al., 2021).

Teacher, Faculty, and Peer Support of Trans High School Students

Teachers and faculty are key figures in supporting trans students in their education and helping those students develop emotionally and psychologically (Sánchez Torrejón et al., 2023). Trans students in elementary to high school who attend schools with teachers and faculty who intervene in peer harassment report lower rates of victimization (Day et al., 2020). Students also describe feeling a stronger school connection and sense of safety at school when teachers and faculty actively prevent bullying and implement LGBT-inclusive policies (Day et al., 2020). The presence of supportive teachers is correlated with health promotion behaviors. Trans high school students who report high levels of LGBTQ support from teachers are more likely to aspire to attend college after graduation (Feldman et al., 2023). Individuals who seek higher education seek preventative healthcare more and drink less alcohol than less educated individuals (U.S. Department of Health and Human Services, n.d.). College graduates have better self-reported

health and physical health than those who did not pursue higher education (U.S. Department of Health and Human Services, n.d.).

Social support from peers serves as a significant protective factor against negative health effects among trans youth. Trans teens and young adults report less binge drinking and lifetime use of cocaine, methamphetamine, and heroin when they perceive high levels of social support from their communities and loved ones (Kennedy et al., 2022). A scoping review of peer social support as a protection against suicide found that the operationalization of this type of support is inconsistent across trans health studies (Kia et al., 2021). Despite these variations, peer support attenuates suicidality among trans people of all ages (Kia et al., 2021). The degree to which a trans high school student perceives their friends caring about them was found to be predictive of suicide attempts, as well (Veale et al., 2017).

Gender-Sexuality Alliances in High School

Safe spaces are an essential form of social support for trans students (Baams & Russell, 2020). A safe space can be defined as "a place, group, or community that is intentionally working to affirm LGBTQ people" (GLSEN, 2019). Safe spaces are often social gatherings or physical sites, such as Gender-Sexualities Alliances (GSAs). These student-led LGBTQ-inclusive organizations connect LGBTQ and allied students to build community and organize around relevant issues that affect their communities and schools (*What is a GSA club?*, n.d.). Gay-Straight Alliances were introduced in Massachusetts schools in the late 1980's to address discrimination against sexual minority students (Sutherland, 2019). In recent years, GSA clubs have renamed themselves Gender-Sexuality Alliances in an effort to include transgender and gender non-conforming students (Sutherland, 2019).

This recent shift in scope to support trans youth in GSAs is much needed, as trans students often face more marginalization than their LGB peers (Sutherland, 2019). Trans students from elementary to high school are more likely to skip school, experience bias-based bullying and victimization, and report negative beliefs about the school environment than LGB students (Day et al., 2018). However, the presence of a GSA promotes social support and protects against adverse social experiences. LGBTQ middle and high school students who have active GSAs are less likely to hear hateful remarks about transgender people or feel unsafe at school regarding their gender expression (GLSEN, 2022). These students were also more likely to report faculty intervention when negative comments were made about gender expressions (GLSEN, 2022).

The support provided by safe spaces protects against numerous negative health outcomes (Baams & Russell., 2020). For example, high school students who attend schools with GSAs are less likely to report illicit drug use, misuse of prescription drugs, and other risky health behaviors compared to students who attend schools without GSA organizations (Baams & Russell, 2020). Elementary through high school students who attend schools with GSAs report lower substance use, and the presence of a GSA in a school is related to lower lifetime smoking habits among students (Baams & Russell, 2020).

Discrimination in High School

Negative experiences and feeling unsafe at school are common among trans students (Pistella et al., 2020). The 2019 National School Climate Survey sampled over 5,000 trans youth in the U.S. and found that 83% felt unsafe at school due to their gender identity and 61% felt unsafe due to their gender expression (Kosciw et al., 2019). Among trans teens and young adults, feeling unsafe in school bathrooms or other public bathrooms is associated with less resilience, more perceived LGBTQ stigma, and more problematic anxiety in the past year (Weinhardt et al.,

2017). Trans teens and young adults who avoid using public bathrooms out of fear of discrimination report lower quality of life and are more likely to face urinary issues, such as kidney and bladder infections (Weinhardt et al., 2017).

The 2019 National School Climate Survey reported that feeling unsafe also drastically affects trans student participation in school activities. Over 72% of the trans sample avoided functions at school to an extent, including assemblies, school dances, and after-school clubs and programs (Kosciw et al., 2019). Bullying and harassment play a major role in these avoidant and fearful reactions. This discrimination is much higher among trans students compared to their cisgender peers and is associated with increased school absence (Pampati et al., 2020), lower academic achievement and worse mental health (Day et al., 2018).

Southern United States Context

The current study is notable as there is currently an absence of literature available on the distinct geographical perspective of the trans population who live in the Southern United States. This paucity is detrimental to the research of the population as approximately 40% of the trans population in the United States lives in the South. Specific environmental stressors that affect the trans community are well-known in this region. Notably, the South is associated with an anti-trans political climate (Wagaman et al., 2020). Less than 6 months into 2024, over 500 anti-trans bills have been proposed in the United States, and almost half of them currently or will soon impact trans Southerners (Trans Legislation Tracker, n.d.). Discriminatory policies that limit the rights of trans individuals are often viewed as barriers to the health and well-being of the trans community (Wagaman et al., 2020) and can exacerbate minority stress processes (Meyer, 2003). However, the Southern U.S. is also known for holding strong family values, and

there is also evidence of strong bonds of trans people organizing in the region (Wagaman et al., 2020).

Theoretical Framework: Minority Stress Model

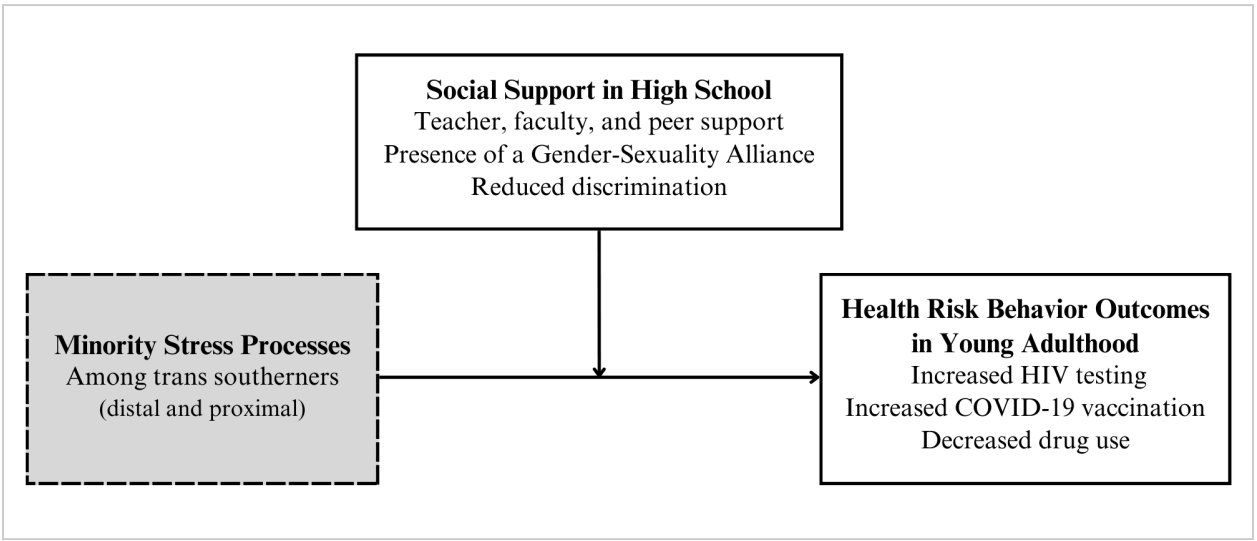
The current study was informed by the Minority Stress Model, which was developed by Ilan Meyer and prompted by a meta-analysis of the high prevalence of mental illness among lesbian, gay, and bisexual (LGB) people compared to heterosexual people (Meyer, 2003). This framework was created to aid in the understanding of the heightened prevalence of disorders due to minority stress (Meyer, 2003). "Minority stress" is a sociological term that refers to the excess stress that occurs among minoritized populations as they handle more stigma, prejudice, and discrimination events compared to people who are non-minorities (Meyer, 2003). These conditions translate to the creation of poor health behaviors and outcomes (Meyer, 2003). The Minority Stress Model is composed of several constructs: Environmental factors and context, an individual's assigned minority status and the way one identifies, characteristics of one's identity, general stressors, distal and proximal minority stress processes, the role of coping strategies and social support, and health outcomes. This conceptual framework is used to review existing research, guide future research, and explore public policy of minority populations (Meyer, 2003).

The Minority Stress Model also highlights that social support can improve the impact of stress (Meyer, 2003) and act as a buffer against the negative effects of minority stress (Johns et al., 2018; Wagaman et al., 2020; Gass et al., 2021). While the model was originally developed to comprehend mental illness disparities among sexual minority people, it has since been applied to research involving transgender populations, social support, and risk behavior. The model has been adapted to review minority stress factors that contribute to high prevalence of tobacco and nicotine use among trans people of all ages (Wolford-Clevenger et al., 2022), examine the impact

of interpersonal risk factors on suicidality among trans teens (Austin et al., 2022), and support findings that proximal stress interventions may reduce depressive symptoms among trans college students in the United States (Dolezal et al., 2023). Therefore, the Minority Stress Model is appropriate for use in the current study concerning social support in high school and its influence on risky health behaviors in emerging adulthood.

The Minority Stress Model is adapted to the current study by applying four constructs, as shown in Figure 1. The protective role of social support is applied in the adapted model by operationalizing the coping and social support construct as (i) feeling supported in high school through faculty and student support, (ii) having a GSA at the high school one attended, (iii) reporting faculty support of a GSA, and (iv) disclosing an absence of discrimination in high school. The Minority Stress Model connects the stress processes to health outcomes, which are operationalized in the current study as the following health risk behaviors in young adulthood: HIV testing frequency, COVID-19 vaccination status, use of drugs (tobacco, marijuana, and illegal drugs), and misuse of over-the-counter medications.

Figure 1. Minority Stress Model, Adapted from Meyer (2003)



METHODOLOGY

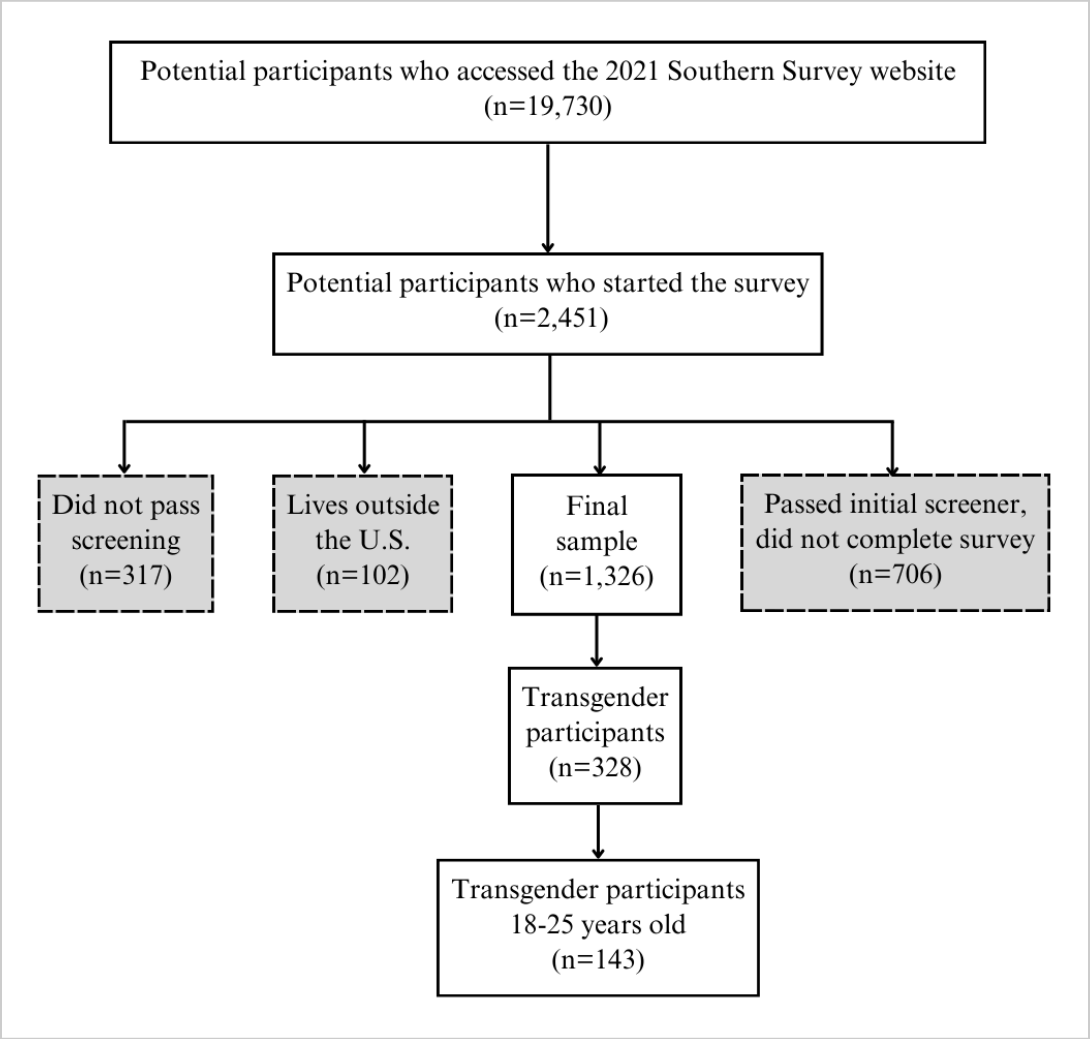
Data Collection, Sampling, and Participants

The current study used data collected by the LGBTQ Institute Southern Survey between June 2021 and March 2022 using an online 15-20 minute survey. Recruitment was conducted via the LGBTQ Institute website (Negro et al., 2023). Partner organizations and social media advertisements aided in the recruitment process. The sampling results are shown in Figure 2. Of the 19,740 people who accessed the survey website, 2,451 participants began the survey. Of the latter group of people, 317 did not pass the initial screening questions, 706 passed the initial survey questions but did not finish the survey, and 102 were not eligible due to not currently living in the Southern United States. The final sample size was 1,326 LGBTQ participants. The current study sampled the 143 participants who self-identified as trans and were between the ages of 18 and 25 years of age. The chosen age range to represent the young adult trans population was informed by literature on health risk behaviors among trans young adults (Hinds et al., 2022; Talley et al., 2024).

Participants were eligible for the Southern Survey if their reported age was 18 years or older, they reported living in the Southern United States currently, and they reported identifying with the LGBTQ community (Negro et al., 2023). The South was defined as the following states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. Survey questions were split into 8 categories that covered broad dimensions. The current study examines variables from the Sample Characteristics, High School Experiences, and Health and Healthcare Experiences sections. The Southern Survey study protocol was reviewed and approved by the

Emory University Institutional Review Board. The current study does not require an Institutional Review Board review because it is not "research" as defined in the federal regulations.

Figure 2. Sampling Flowchart of 2021 Southern Survey Trans Young Adults (18-25 years old)



Demographic Variables

To measure social support and health risk behavior among trans young adults in the Southern United States, the Sample Characteristics, High School Experiences, and Health and Healthcare Experiences sections of the 2021 Southern Survey were utilized. Participants self-reported their trans identity through this survey question: “Do you currently identify or have you ever identified as transgender?”. The LGBTQ Institute included the following definition of transgender underneath the question: “By transgender, we mean an umbrella term for people whose gender identity and/or expression is different from cultural expectations based on the sex they were assigned at birth”. Those who answered “Yes” were included in the current study. Trans participants who were between 18 and 25 were selected to represent the trans young adult population for the current study, as this age range reflects the standards set by literature involving health risk behavior among transgender young adults (Hinds et al., 2022; Talley et al., 2024). Sociodemographic data is shown in Table 1. The Southern United States will be considered the fourteen states that were selected as inclusion criteria for the 2021 Southern Survey.

Social Support Variables

Social support in high school is operationalized as experiences that were supportive or non-discriminatory while at high school. Neutral responses to these measures are considered unsupportive because benefits were not obtained in these experiences. Four items in the Southern Survey were chosen to represent social support in high school and the prevalence of these experiences is shown in Table 2. The items are high school support through (i) faculty support, (ii) student support, (iii) the presence of an LGBT organization such as a GSA, and (iv) faculty support of an LGBT organization or GSA. The first 3 measures were Likert scale questions. Those who answered “Very supportive” or “Somewhat supportive” are considered supported,

while those who responded “Indifferent”, “Somewhat supportive”, or “Very unsupportive” are considered unsupported. Participants were asked a dichotomous question about the presence of an LGBTQ+ organization at their high school. Participants who answered “Yes” are considered supported and those who answered “No” or “I don’t know” are considered unsupported. Those who did not answer these questions were not considered in this measurement.

Various items captured high school experiences of discrimination and behavioral choices made to minimize LGBTQ+ discrimination. The 5 items chosen to represent discriminatory experiences in high school are (i) denial of access to appropriate bathrooms or other facilities, (ii) being bullied or harassed, (iii) being the target of rumors, (iv) feeling unsafe at school, (v) and avoidance of certain activities at school. Participants who responded “Never” to these ranking questions are considered supported, while respondents who selected “Yes, frequently” or “Yes, always” to these experiences are considered unsupported. Those who did not answer these questions were not considered in this measurement.

Risky Health Behavior Variables

Health risk behavior is operationalized as behaviors that cause harm to an individual or do not promote health and wellness based on current public health and medical literature. The approximate date of an individual’s last HIV test, COVID-19 vaccination status, tobacco use, marijuana use, illegal drug use, and over-the-counter drug misuse are examined. The prevalence of each health risk behavior among the current study’s sample is shown in Table 2.

Participants were posed a ranking question on one’s latest HIV test. Those who reported being tested for HIV within the last 6 months” or “6-12 months ago” are considered to be engaging in non-risky health behaviors. Those who reported testing “1-5 years ago”, “more than 5 years ago”, or “never” are considered to be engaging in risky health behaviors. This distinction

is informed by recommendations from the Centers for Disease Control and Prevention (CDC) and U.S. Department of Health and Human Services (HHS) for those at high risk of contracting HIV to be tested at least once per year (Centers for Disease Control and Prevention, 2022; U.S. Department of Health and Human Services, 2023). Those who did not answer this question were not considered in this measurement. Participants were asked a ranking question about their COVID-19 vaccination status. Those who reported receiving "Yes, the first dose of vaccine (where two doses are required, Pfizer and Moderna vaccines)" or "Yes, fully vaccinated (two doses or the one-dose Johnson & Johnson vaccine)" are considered to be engaging in non-risky health behaviors. Participants who reported "Not yet, but planning to" or "No" are considered to be engaging in risky health behaviors. COVID-19 vaccines became available to all Americans above 16 years of age in April 2021 (U.S. Department of Health and Human Services, 2024), and the data collection phase of the Southern Survey occurred from June 2021 to March 2022, therefore participants were given space to receive at least one dose prior to taking the survey. Participants who did not answer this question were not considered in this measurement.

The drug use and misuse ranking questions were worded as how often the participant uses each drug. Participants who reported "never" using tobacco, marijuana, or illegal drugs or misusing over-the-counter drugs to get high are considered to be engaging in non-risky health behaviors. Those who reported using or misusing these substances "once a year or less often", "a few times a year", "a few times a month", "a few times a week", or "daily" are considered to be engaging in risky health behaviors. This distinction is informed by the CDC and many other clinical research resources that report numerous negative health outcomes as a result of using or misusing these substances (Ghasemiesfe et al., 2019; Centers for Disease Control and Prevention, 2020a; Centers for Disease Control and Prevention, 2020b); Centers for Disease

Control and Prevention, 2021; Li et al., 2022; U.S. Department of Health and Human Services, 2024). Those who reported "prefer not to say" or did not answer the question were not considered in this measurement.

Control Variables

Due to the cross-sectional nature of the survey data, the selected control variables to adjust for potential confounders that might lead to under- or over-estimates of the associations between exposure and outcome variables (Asiamah et al. 2019; D. Giovenco, personal communication, February 27, 2024). Racial identity and type of high school attended were adjusted for in the analysis of the current study. This decision was made to minimize the possibility of controlling for an excessive amount of potential confounders. Due to the retrospective nature of this study, it is also vital that the chosen control variables are consistent through time - i.e. at the time of the retrospective recall of high school experiences, as well as at the time of data collection. For example, household income was not adjusted for because one's financial situation may have fluctuated between high school and young adulthood. Therefore, self-reported racial identity and type of high school attended are adjusted for.

Those who self-identified as fully White were the control group because of the hundreds of years of privileges afforded to this racial group in the United States (Kwate & Goodman, 2014). Race was adjusted for to account for the various social and health inequities faced by people of color. Racial stratification in the analysis beyond White and non-White was not possible because there was not enough racial diversity among the trans young adult sample to produce statistical power. The type of high school was stratified as public and private/other schools because this experience may indicate socioeconomic status in adolescence. Public school was used as the control group as this is the default educational option in the United States. Those

who attended an alternative educational environment, such as a private or charter school, may have families who were financially capable of choosing a better school at the time. The school type was not further stratified due to the lack of participants who attended private/other schools.

Data Analysis

The distribution of variables was examined by creating binary variables. Frequency distributions were used to analyze descriptive statistics. Then, the unadjusted bivariate relationships were investigated using crosstabs at the 0.05 level. Multivariable odds ratios were examined with binary logistic regressions, which adjusted for two potentially confounding variables. Self-reported racial identity and type of high school attended were adjusted for to investigate the impact on the relationship between social support and health risk behavior. The analyses were completed using IBM SPSS Statistics 29.0.

Positionality Statement

As the principal investigator of this research, I am committed to recognizing my privileges and biases as a researcher in public health by disclosing my positionality. I acknowledge that my identity as a White woman may have narrowed my understanding of my research topics. For example, there may be external factors that impact men and/or people of color that I am not fully aware of due to my viewpoint. My racial identity also aligns closely with the sample of participants of the 2021 Southern Survey dataset used in the current study, which may have introduced further bias.

As a cisgender person, I am aware that I exist outside of the transgender community. My comprehension of this population is limited to my personal experiences, knowledge, and relationships with the transgender community. As a queer woman, I recognize that my active engagement with the LGBTQ community could have translated to a positive bias toward my

study's participants. While my intentions are to advance the behavioral research of and advocate for the transgender community, I accept that my positionality has influenced my work to an extent. To address my influence on the current study, I turned to literature and experts. I delved into the literature for peer-reviewed evidence as support and consciously tried to include researchers of color in my references. I also consulted experts in the field of trans rights and worked closely with my thesis committee.

RESULTS

Participant Characteristics

Southern Survey participants who were 18 to 25 years of age and self-identified as trans were included in this study. Table 1 provides the sociodemographic data of this sample, which was obtained using frequency distributions. The average age was 20.9, with a standard deviation of 2.5. Participants predominantly identified as non-binary or a third gender (60.8%) and chose other/queer/self-describe for their sexual orientation (25.9%). The majority of the sample identified as fully White (75.5%), followed by mixed race (12.0%), Hispanic/Latino (4.9%), Black/African American (4.9%), and Asian (2.1%). The most common states they lived in included Alabama (25.2%), Texas (14.0%), Georgia (11.9%), and North Carolina (11.9%). A high proportion of participants attended public high schools (72.0%) and had earned some college credits at the time of taking the survey (35.0%). Despite the majority of participants reporting being employed in multiple positions (37.8%), most participants reported a household salary below $30,000 (33.6%). Approximately 56% of participants had health insurance through a current or former employer or union for themselves or a family member. Due to young adults

losing their ability at 26 to use a parent's health insurance, it is expected that most of this sample would have health insurance (U.S. Department of Health and Human Services, 2022).

Bivariate Analyses

Crosstabs were used to determine unadjusted associations among social support and health risk behavior variables (see Table 3). Experiences in high school of having an LGBTQ+ organization of Gay-Straight Alliance (GSA) was associated with higher uptake of HIV testing within the last 12 months (p=.01). Experiences in high school of feeling that faculty and teachers supported LGBTQ+ students was associated with higher uptake of HIV testing within the last 12 months (p=.03) and marginally associated with higher uptake of at least one COVID-19 vaccination dose (p=.12). Experiences in high school of feeling that faculty supported LGBTQ+ organizations or Gay-Straight Alliances (GSAs) was associated with higher uptake of HIV testing within the last 12 months (p=.04) and marginally associated with higher uptake of at least one COVID-19 vaccination dose (p=.09). Experiences in high school of feeling that high school students supported LGBTQ+ students was marginally associated with higher uptake of at least one COVID-19 vaccination dose (p=.19) and marginally associated with not using tobacco in the past 12 months (p=.11).

Experiences in high school of avoiding certain school activities to minimize LGBTQ+ discrimination was marginally associated with not using tobacco (p=.18). Experiences in high school of being the target of rumors due to being LGBTQ+ was associated with not using marijuana (p=.05) and marginally associated with not using tobacco (p=.09). Experiences in high school of being bullied or harassed due to being LGBTQ+ was marginally associated with not using marijuana (p=.09). Experiences in high school of denial of access to appropriate bathrooms due to being LGBTQ+ was associated with not using marijuana (p=.05).

Multivariable Analyses

As shown in Tables 4-5, the multivariable analyses indicated higher odds of health promotion behavior among trans young adults who experienced social support in high school, adjusted for race and high school type. Table 4 presents the multivariable results of the association of HIV testing within the last year and multiple sources of high school social support. Trans young adults who had GSAs at their high schools are over 5 times more likely to have HIV testing within 12 months (aOR=5.33, 95% CI=1.61-17.63). Trans young adults who felt that their high school teachers and/or faculty supported LGBTQ+ students are almost 3 times more likely to have HIV testing within 12 months (aOR=2.90, 95% CI=1.09-7.83). Trans young adults who felt that their high school teachers and/or faculty supported GSAs are almost 3.5 times more likely to have HIV testing within 12 months (aOR=3.46, 95% CI=1.00-12.02).

Table 5 presents the multivariable results of the association of any marijuana use and multiple experiences of discrimination in high school, controlling for race and high school type. Trans young adults who were denied access to appropriate bathrooms at high school are over 2 times more likely to use marijuana (aOR=2.25, 95% CI=0.98-5.16). Trans young adults who were the target of rumors are 48% more likely to use marijuana (aOR=0.48, 95% CI=0.23-0.99).

DISCUSSION

This study aimed to investigate the relationship between social support experiences in high school and health risk behavior among trans young adults living in the Southern United States. It used data from the 2021 LGBTQ Institute Southern Survey and was structured using minority stress process, social support, and health outcome constructs from the Minority Stress Model.

This study's results found that trans young adults who had a GSA in their high school had five times greater odds of receiving HIV testing within the last 12 months compared to trans young adults who did not have that support, even when adjusting for potentially confounding variables of race and type of high school attended. This finding implies that social support may contribute to HIV prevention behaviors, which aligns with the role of GSAs. Comprehensive sex education resources, including HIV/AIDS prevention information, are often provided by GSA organizations (Kosciw et al., 2020).

Support provided by high school teachers and faculty was also found to promote regular HIV testing behavior during young adulthood. Trans young adults who felt that their high school teachers and faculty supported LGBTQ+ students had 3 times greater odds of receiving HIV testing within the last 12 months compared to trans young adults who did not have that support, even when adjusting for potentially confounding variables of race and type of high school attended. Those who felt that their teachers and faculty supported GSAs had 3.5 times greater odds of receiving HIV testing within 12 months. Similarly, these findings are supported by current literature. Trans high schoolers who report being highly supported by teachers are more likely to pursue higher education (Feldman et al., 2023), and those who seek higher education

pursue preventative healthcare more than those who do not pursue higher education (U.S. Department of Health and Human Services, n.d.).

Experiences of discrimination in high school were found to be associated with marijuana use in young adulthood. Trans young adults who were denied access to appropriate bathrooms at high school had 2 times greater odds of ever using marijuana. This finding was consistent with the Minority Stress Model which posts that exposure to LGBTQ+-related discrimination may result in psychological distress, which could explain the correlation of denial to appropriate bathrooms in high school with recent substance use behaviors and disorders (Wheldon et al., 2023).

Trans young adults who were the target of rumors while in high school due to being LGBTQ+ had 52% reduced odds of ever using marijuana. This finding was unexpected and runs counter to the finding reported above on the association between bathroom denial in high school and increased marijuana use. It is unclear why this inconsistent pattern emerged. One potential reason may be regarding the binary measure of marijuana use in the current study (any versus none in the past 12 months). Also, the use and benefits of marijuana differ from other drugs included in this study, such as methamphetamines use and Vicodin misuse. Research that examines the impact of marijuana use on human stress responses is sparse, but is gaining traction (al'Absi et al., 2021). Low doses of delta-9-tetrahydrocannabinol (THC), a psychoactive compound found in marijuana, are associated with reduced subjective stress, yet high doses may escalate negative mood (Childs et al., 2017). Therefore, marijuana may be used as a protective coping measure among the trans population for coping with minority stress processes, such as being the target of rumors in high school.

Strengths and Limitations

The data used to conduct the current study was gathered by the LGBTQ Institute from 2021 to 2022. Due to how recently the data was collected, the current attitudes of trans people and the effects of COVID-19 on the participants are reflected in the current study. This study adds to trans health literature as it differentiates the experiences of trans teens from young adults. Research in this field often recruits a large age range of trans participants who may be in their early teens to mid- or late twenties to represent young adulthood. This study seeks to differentiate between trans experiences in high school and young adulthood as life experiences change significantly between these life stages. To the best of my knowledge, this study is the only one of its kind. I was unable to find a published study that analyzes social support and health risk behavior among trans young adults living in the Southern United States. Therefore, this study may be the foundation for further research on similar topics.

Despite best efforts to develop and execute an impeccable and comprehensive study, some limitations exist. The sample used for this analysis is mainly White participants with health insurance, which may not be representative of the demographics of the Southern trans young adult population. The sampling methods used in the current study resulted in a relatively small sample of 143 people, which reduces statistical power to run more advanced analysis. The instruments used by the LGBTQ Institute to measure social support and health risk behaviors lacked specificity as one item captured each of the variables in the current study. Similarly, the substance use measures were dichotomized into binary variables due to the low statistical power, limiting a more nuanced interpretation of drug use as a health risk behavior. Lastly, the LGBTQ Institute implemented a cross-sectional study design. The current study would have benefitted from analyzing data from a longitudinal study design. Surveys distributed to a sample during

high school and in young adulthood would reduce the likelihood that participants forget their experiences in the high school setting.

Implications and Future Research

Overall, this study's results support a correlation between social support experiences in high school and health risk behaviors. This aligns with the Minority Stress Model in that minority stress processes among trans high school students were buffered by social support, to produce health promotion behaviors later in young adulthood. The compelling results of the current study prompt the need for public health action and further research.

HIV testing behaviors in trans young adulthood were found to be improved by the presence of a GSA, support from teachers and faculty of LGBTQ+ students, and support from teachers and faculty of GSAs. These findings align with the literature on the profound effects of high school safe spaces and school staff support on the health and well-being of trans students. I propose the expansion of GSAs and training provided to high school staff to support trans students in the Southern United States. These actions may be challenging to implement in the Southern United States due to the region’s political and religious context. However, the data produced by this study highlights the importance of these resources in improving the lives of trans young people.

Marijuana use among trans young adults was shown to increase among those who were denied access to appropriate bathrooms in high school because others believed they were LGBTQ+. This corresponds with the above HIV testing behavior results, the Minority Stress Model, and current literature. However, the current study also found that marijuana use was shown to decrease among those who were the target of rumors in high school because others believed they were LBGTQ+. Due to this unexpected finding and the medicinal qualities of

marijuana, I propose further research into the effects of marijuana use as a protective factor among trans young adults.

To further contribute to research on the topics covered in the current study, I submit the following recommendations. This study's limitations include a smaller sample size, a majority White sample, and a lack of specificity in the survey measurements. Generalizability would be increased if this study were replicated with an expanded and racially diverse sample, and the use of multiple instruments to collect data on each variable. The importance of continuing to research the Southern United States environment and its impact on the trans population cannot be emphasized more. Approximately 40% of the country's trans population lives in this region (Herman et al., 2023) therefore, more insight is needed. Other perspectives may be explored to produce a more comprehensive understanding of the connection between social support and health risk behavior. For example, further research could investigate more risky behaviors such as vaping and drunk driving. A qualitative or mixed methods study design may also be used to gather information regarding external factors, such as other social determinants of health.

Conclusions

This study aimed to investigate if high school experiences of social support have an effect on health risk behavior in trans young adults living in the Southern United States. Current peer-reviewed literature on these topics and the Minority Stress Model informed the hypothesis that high school social support would act as a protective factor against the engagement of risky health behaviors in young adulthood. Significant correlations were found between the presence of GSAs and support from teachers and faculty increasing the likelihood of trans young adults being tested for HIV within the last 12 months. These findings highlight the importance of school-based support systems on the long-term health outcomes of trans youth. Discrimination

experiences in high school were also found to be correlated with risky health behavior in young adulthood. Those who were denied access to appropriate bathrooms in high school due to being LGBTQ+ were more likely to use marijuana. Those who were the target of rumors due to being LGBTQ+ were less likely to use marijuana. These findings suggest that further research is needed to understand a potentially complex relationship between social support and marijuana in this population.

REFERENCES

al'Absi, M., & Allen, A. M. (2021). Impact of Acute and Chronic Cannabis Use on Stress Response Regulation: Challenging the Belief That Cannabis Is an Effective Method for Coping. Frontiers in psychology, 12, 687106. https://doi.org/10.3389/fpsyg.2021.687106

Alanko, K., & Lund, H. (2019). Transgender Youth and Social Support: A Survey Study on the Effects of Good Relationships on Well-being and Mental Health. *YOUNG Editorial Group*, *28*(2), 199–216. https://doi.org/10.1177/1103308819850039

Andrzejewski, J., Pampati, S., Steiner, R. J., Boyce, L., & Johns, M. M. (2020). Perspectives of transgender youth on parental support: Qualitative findings from the resilience and Transgender Youth Study. *Health Education & Behavior*, *48*(1), 74–81. https://doi.org/10.1177/1090198120965504

Ascha, M., Merrick, E., Chwa, E., Hackenberger, P., Stockslager, C., Termanini, K., Benning, C., Felt, D., Jordan, S. W., & Beach, L. B. (2023). A Single Center Review of COVID-19 Testing and Vaccination in the Transgender and Nonbinary Population. LGBT health, 10(5), 344–354. https://doi.org/10.1089/lgbt.2022.0072

Asiamah N, Mends-Brew E, Boison BK. A spotlight on cross-sectional research: addressing the issues of confounding and adjustment. International Journal of Healthcare Management. 2021 Jan 2;14(1):183-96.

Austin, A., Craig, S. L., D'Souza, S., & McInroy, L. B. (2022). Suicidality Among Transgender Youth: Elucidating the Role of Interpersonal Risk Factors. Journal of interpersonal violence, 37(5-6), NP2696–NP2718. https://doi.org/10.1177/0886260520915554

Baams, L., Pollitt, A. M., Laub, C., & Russell, S. T. (2020). Characteristics of Schools With and Without Gay-Straight Alliances. Applied Developmental Science, 24(4), 354–359. https://doi.org/10.1080/10888691.2018.1510778

Casey, L. S., Reisner, S. L., Findling, M. G., Blendon, R. J., Benson, J. M., Sayde, J. M., & Miller, C. (2019). Discrimination in the United States: Experiences of lesbian, gay, bisexual, transgender, and queer Americans. Health services research, 54 Suppl 2(Suppl 2), 1454–1466. https://doi.org/10.1111/1475-6773.13229

Centers for Disease Control and Prevention. (2020a, April 28). *Health Effects*. Centers for Disease Control and Prevention. https://www.cdc.gov/tobacco/basic_information/health_effects/index.htm

Centers for Disease Control and Prevention. (2020b, August 24). People Who Use or Inject Drugs and Viral Hepatitis. Centers for Disease Control and Prevention. https://www.cdc.gov/hepatitis/populations/idu.htm#

Centers for Disease Control and Prevention. (2021, June 2). *Health Effects of Marijuana*. Centers for Disease Control and Prevention. https://www.cdc.gov/marijuana/health-effects/index.html

Centers for Disease Control and Prevention. (2022, June 22). *GETTING TESTED*. Centers for Disease Control and Prevention. https://www.cdc.gov/hiv/basics/hiv-testing/getting-tested.html

Childs, E., Lutz, J. A., & de Wit, H. (2017). Dose-related effects of delta-9-THC on emotional responses to acute psychosocial stress. Drug and alcohol dependence, 177, 136–144. https://doi.org/10.1016/j.drugalcdep.2017.03.030

Cotaina, M., Peraire, M., Boscá, M., Echeverria, I., Benito, A., & Haro, G. (2022). Substance Use in the Transgender Population: A Meta-Analysis. *Brain Sciences*, *12*(3), 366. https://doi.org/10.3390/brainsci12030366

D'Angelo, A. B., Argenio, K., Westmoreland, D. A., Appenroth, M. N., & Grov, C. (2021). Health and Access to Gender-Affirming Care During COVID-19: Experiences of transmasculine individuals and men assigned female sex at birth. American journal of men's health, 15(6), 15579883211062681. https://doi.org/10.1177/15579883211062681

Day, J. K., Perez-Brumer, A., & Russell, S. T. (2018). Safe Schools? Transgender Youth's School Experiences and Perceptions of School Climate. Journal of youth and adolescence, 47(8), 1731–1742. https://doi-org.proxy.library.emory.edu/10.1007/s10964-018-0866-x

De Pedro, K. T., Gilreath, T. D., Jackson, C., & Esqueda, M. C. (2017). Substance Use Among Transgender Students in California Public Middle and High Schools. The Journal of school health, 87(5), 303–309. https://doi.org/10.1111/josh.12499

Dolezal, M. L., Decker, M., Higgins, M., & Littleton, H. (2023). Evaluation of the gender minority stress model in transgender and gender diverse college students. *Psychology of Sexual Orientation and Gender Diversity*. https://doi.org/10.1037/sgd0000669

Feldman, S., Watson, R. J., & Gallik, C. (2022). College Aspirations, Gender Sexuality Alliances, and Teacher Support among Diverse LGBTQ Youth. Educational review, 74(2), 281–297. https://doi.org/10.1080/00131911.2020.1816907

Garg, I., Hanif, H., Javed, N., Abbas, R., Mirza, S., Javaid, M. A., Pal, S., Shekhar, R., & Sheikh, A. B. (2021). COVID-19 Vaccine Hesitancy in the LGBTQ+ Population: A Systematic Review. Infectious disease reports, 13(4), 872–887. https://doi.org/10.3390/idr13040079

Gass, B. V., Horvath, K. J., Marrow, E., Rood, B. A., & Pantalone, D. W. (2021). Associations Between Social Support Availability and HIV Risk and Protective Factors in a U.S. Sample of Adults with Diverse Transgender Identities. LGBT health, 8(1), 60–67. https://doi.org/10.1089/lgbt.2020.0035

Ghasemiesfe, M., Barrow, B., Leonard, S., Keyhani, S., & Korenstein, D. (2019). Association Between Marijuana Use and Risk of Cancer: A Systematic Review and Meta-analysis. JAMA network open, 2(11), e1916318. https://doi.org/10.1001/jamanetworkopen.2019.16318

GLSEN. (2019). *Safe Space Kit: A Guide to Supporting Lesbian, Gay, Bisexual, Transgender, and Queer Students in Your School*. GLSEN. https://www.glsen.org/sites/default/files/2019-11/GLSEN%20English%20SafeSpace%20Book%20Text%20Updated%202019.pdf

GLSEN. (2022). The 2021 National School Climate Survey EXECUTIVE SUMMARY. Retrieved April 2, 2024, from https://www.glsen.org/sites/default/files/2022-10/NSCS-2021-Executive_Summary-EN.pdf

Herman, J. L., Flores, A. R., & O'Neill, K. K. (2023, July 10). *How many adults and youth identify as transgender in the United States?*. Williams Institute. https://williamsinstitute.law.ucla.edu/publications/trans-adults-united-states/

Hinds, J. T., Chow, S., Loukas, A., & Perry, C. L. (2022). Exploring transgender and gender diverse young adult tobacco use. Journal of Homosexuality, 69(13), 2188-2208.

Hughto, J. M. W., Restar, A. J., Wolfe, H. L., Gordon, L. K., Reisner, S. L., Biello, K. B., Cahill, S. R., & Mimiaga, M. J. (2021). Opioid pain medication misuse, concomitant substance misuse, and the unmet behavioral health treatment needs of transgender and gender diverse adults. Drug and alcohol dependence, 222, 108674. https://doi.org/10.1016/j.drugalcdep.2021.108674

Johns, M. M., Beltran, O., Armstrong, H. L., Jayne, P. E., & Barrios, L. C. (2018). Protective Factors Among Transgender and Gender Variant Youth: A Systematic Review by Socioecological Level. The journal of primary prevention, 39(3), 263–301. https://doi.org/10.1007/s10935-018-0508-9

Jones, J. M. (2023, June 5). *U.S. LGBT identification steady at 7.2%*. Gallup.com. https://news.gallup.com/poll/470708/lgbt-identification-steady.aspx

Kennedy, K. S., Harper, C. R., Li, J., Suarez, N. A., & Johns, M. M. (2022). Protective Environments, Health, and Substance Use Among Transgender and Gender Expansive Youth. LGBT health, 9(6), 393–400. https://doi.org/10.1089/lgbt.2021.0258

Kia, H., MacKinnon, K. R., Abramovich, A., & Bonato, S. (2021). Peer support as a protective factor against suicide in trans populations: A scoping review. Social science & medicine (1982), 279, 114026. https://doi.org/10.1016/j.socscimed.2021.114026

Kosciw, J. G., Clark, C. M., Truong, N. L., & Zongrone, A. D. (2020). The 2019 National School Climate Survey: The experiences of lesbian, gay, bisexual, transgender, and queer youth in our nation's schools. New York: GLSEN.

Kwate, N. O., & Goodman, M. S. (2014). An empirical analysis of White privilege, social position and health. Social science & medicine (1982), 116, 150–160. https://doi.org/10.1016/j.socscimed.2014.05.041

Li, C., & Sun, J. (2022). The impact of current smoking, regular drinking, and physical inactivity on health care-seeking behavior in China. BMC health services research, 22(1), 52. https://doi.org/10.1186/s12913-022-07462-z

London-Nadeau, K., Chadi, N., Taylor, A. B., Chan, A., Pullen Sansfaçon, A., Chiniara, L., Lefebvre, C., & Saewyc, E. M. (2023). Social Support and Mental Health Among Transgender and Nonbinary Youth in Quebec. *LGBT health*, *10*(4), 306–314. https://doi.org/10.1089/lgbt.2022.0156

McNaghten, A. D., Brewer, N. T., Hung, M.-C., Lu, P.-J., Daskalakis, D., Abad, N., Kriss, J., Black, C., Wilhelm, E., Lee, J. T., Gundlapalli, A., Cleveland, J., Elam-Evans, L., Bonner, K., & Singleton, J. (2022, February 3). *Covid-19 Vaccination Coverage and Vaccine Confidence by Sexual Orientation and Gender Identity*. Centers for Disease Control and Prevention. https://www.cdc.gov/mmwr/volumes/71/wr/mm7105a3.htm

Meyer I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. Psychological Bulletin, 129(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Negro, Giacomo, Melissa J. Williams, Gabrielle Lopiano, Ashlei R. Petion, and Ryan M. Roemerman. 2023. State of the South: A Snapshot on the Conditions and Life Experiences of LGBTQ Southerners. Atlanta, GA: National Center for Civil and Human Rights LGBTQ Institute.

Olakunde, B. O., Pharr, J. R., Adeyinka, D. A., & Conserve, D. F. (2022). Nonuptake of HIV Testing Among Transgender Populations in the United States: Results from the 2015 U.S. Transgender Survey. Transgender health, 7(5), 430–439. https://doi.org/10.1089/trgh.2020.0141

Pampati, S., Andrzejewski, J., Sheremenko, G., Johns, M., Lesesne, C. A., & Rasberry, C. N. (2020). School Climate Among Transgender High School Students: An Exploration of School Connectedness, Perceived Safety, Bullying, and Absenteeism. The Journal of school nursing : the official publication of the National Association of School Nurses, 36(4), 293–303. https://doi.org/10.1177/1059840518818259

Pistella, J., Ioverno, S., Rodgers, M. A., & Russell, S. T. (2020). The contribution of school safety to weight-related health behaviors for transgender youth. Journal of adolescence, 78, 33–42. https://doi.org/10.1016/j.adolescence.2019.12.001

Poteat, V. P., Watson, R. J., & Fish, J. N. (2021). Teacher Support Moderates Associations among Sexual Orientation Identity Outness, Victimization, and Academic Performance among LGBQ+Youth. Journal of youth and adolescence, 50(8), 1634–1648. https://doi.org/10.1007/s10964-021-01455-7

Reback, C. J., Fletcher, J. B., & Kisler, K. A. (2021). Text Messaging Improves HIV Care Continuum Outcomes Among Young Adult Trans Women Living with HIV: Text Me, Girl!. AIDS and behavior, 25(9), 3011–3023. https://doi.org/10.1007/s10461-021-03352-3

Rivers, I., Gonzalez, C., Nodin, N., Peel, E., & Tyler, A. (2018). LGBT people and Suicidality in youth: A qualitative study of perceptions of risk and protective circumstances. *Social Science & Medicine*, *212*, 1–8. https://doi.org/10.1016/j.socscimed.2018.06.040

Ruppert, R., Kattari, S. K., & Sussman, S. (2021). Review: Prevalence of Addictions among Transgender and Gender Diverse Subgroups. International journal of environmental research and public health, 18(16), 8843. https://doi.org/10.3390/ijerph18168843

Russell, S. T., Ryan, C., Toomey, R. B., Diaz, R. M., & Sanchez, J. (2011). Lesbian, gay, bisexual, and transgender adolescent school victimization: implications for young adult health and adjustment. The Journal of school health, 81(5), 223–230. https://doi.org/10.1111/j.1746-1561.2011.00583.x

Ryan, C., Russell, S. T., Huebner, D., Diaz, R., & Sanchez, J. (2010). Family acceptance in adolescence and the health of LGBT Young Adults. *Journal of Child and Adolescent Psychiatric Nursing*, *23*(4), 205–213. https://doi.org/10.1111/j.1744-6171.2010.00246.x

Salvatore, C., & Daftary-Kapur, T. (2020). The influence of emerging adulthood on the risky and dangerous behaviors of LGBT populations. *Social Sciences*, *9*(12), 228. https://doi.org/10.3390/socsci9120228

Sánchez Torrejón, B., Granero Andújar, A., & Esteban Mora, J. (2023). Absence of Transgender Identities in Primary Education Teachers' Training and Its Implications in the Classroom: A Phenomenological Study. *Education Sciences*, *13*(8), 809. https://doi.org/10.3390/educsci13080809

Sawyer, A. N., Bono, R. S., Kaplan, B., & Breland, A. B. (2022). Nicotine/tobacco use disparities among transgender and gender diverse adults: Findings from wave 4 PATH data. Drug and alcohol dependence, 232, 109268. https://doi.org/10.1016/j.drugalcdep.2022.109268

Selkie, E., Adkins, V., Masters, E., Bajpai, A., & Shumer, D. (2020). Transgender Adolescents' Uses of Social Media for Social Support. *Journal of Adolescent Health*, *66*(3), 275–280. https://doi.org/10.1016/j.jadohealth.2019.08.011

Sevelius, J. M., Poteat, T., Luhur, W. E., Reisner, S. L., & Meyer, I. H. (2020). HIV Testing and PrEP Use in a National Probability Sample of Sexually Active Transgender People in the United States. Journal of acquired immune deficiency syndromes (1999), 84(5), 437–442. https://doi.org/10.1097/QAI.0000000000002403

Stutterheim, S. E., van Dijk, M., Wang, H., & Jonas, K. J. (2021). The worldwide burden of HIV in transgender individuals: An updated systematic review and meta-analysis. PloS one, 16(12), e0260063. https://doi.org/10.1371/journal.pone.0260063

Sutherland, D. K. (2019). The push for transgender inclusion: Exploring boundary spanning in the gay–straight alliance. *Sociology Compass*, *13*(11). https://doi.org/10.1111/soc4.12739

Talley, M.B. (2024). "Nicotine, Tobacco, Marijuana Use Typologies among Lesbian, Gay, Bisexual, and Transgender Youth and Young Adults in the United States." Dissertation, Georgia State University doi: https://doi.org/10.57709/36410342

Tariq, N., & Gupta, V. (2023). High Risk Behaviors. In StatPearls. StatPearls Publishing.

Tordoff, D. M., Wanta, J. W., Collin, A., Stepney, C., Inwards-Breland, D. J., & Ahrens, K. (2022). Mental Health Outcomes in Transgender and Nonbinary Youths Receiving Gender-Affirming Care. JAMA network open, 5(2), e220978. https://doi.org/10.1001/jamanetworkopen.2022.0978

Trans Legislation Tracker. (n.d.). *2024 Anti-Trans Bills: Trans legislation tracker*. TransLegislation.com. https://translegislation.com/

U.S. Department of Health and Human Services. (n.d.). *Enrollment in Higher Education*. Healthy People 2030. https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/enrollment-higher-education

U.S. Department of Health and Human Services. (2022, March 15). *Young Adult Coverage*. HHS.gov. https://www.hhs.gov/healthcare/about-the-aca/young-adult-coverage/index.html

U.S. Department of Health and Human Services. (2023, September 15). *HIV Testing Overview*. HIV.gov. https://www.hiv.gov/hiv-basics/hiv-testing/learn-about-hiv-testing/hiv-testing-overview

U.S. Department of Health and Human Services. (2024, January 13). Over-the-Counter Medicines DrugFacts. National Institutes of Health. https://nida.nih.gov/publications/drugfacts/over-counter-medicines

U.S. Department of Health and Human Services. (2024, March 13). *Covid-19 Vaccines*. HHS.gov. https://www.hhs.gov/coronavirus/covid-19-vaccines/index.html

Veale, J. F., Peter, T., Travers, R., & Saewyc, E. M. (2017). Enacted Stigma, Mental Health, and Protective Factors Among Transgender Youth in Canada. Transgender health, 2(1), 207–216. https://doi.org/10.1089/trgh.2017.0031

Wagaman, M. A., Watts, K. J., Lamneck, V., D'Souza, S. A., McInroy, L. B., Eaton, A. D., & Craig, S. (2020). Managing stressors online and offline: LGBTQ+ youth in the Southern United States. *Children and Youth Services Review*, *110*. https://doi.org/10.1016/j.childyouth.2020.104799

Weinhardt, L. S., Stevens, P., Xie, H., Wesp, L. M., John, S. A., Apchemengich, I., Kioko, D., Chavez-Korell, S., Cochran, K. M., Watjen, J. M., & Lambrou, N. H. (2017). Transgender and Gender Nonconforming Youths' Public Facilities Use and Psychological Well-Being: A Mixed-Method Study. Transgender health, 2(1), 140–150. https://doi.org/10.1089/trgh.2017.0020

Wheldon, C. W., Watson, R. J., Cunningham, C., & Fish, J. N. (2023). State Marijuana Laws and Marijuana Use Among Sexual and Gender Minority Youth in the United States. LGBT health, 10(2), 121–129. https://doi.org/10.1089/lgbt.2021.0419

Wolford-Clevenger, C., Hill, S. V., & Cropsey, K. (2022). Correlates of Tobacco and Nicotine Use Among Transgender and Gender Diverse People: A Systematic Review Guided by the Minority Stress Model. Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco, 24(4), 444–452. https://doi.org/10.1093/ntr/ntab159

Wood, S. M., Lee, S., Barg, F. K., Castillo, M., & Dowshen, N. (2017). Young Transgender Women's Attitudes Toward HIV Pre-exposure Prophylaxis. The Journal of adolescent health : official publication of the Society for Adolescent Medicine, 60(5), 549–555. https://doi.org/10.1016/j.jadohealth.2016.12.004

What is a GSA club?. GSA Network. (n.d.). https://gsanetwork.org/what-is-a-gsa/

TABLES

Table 1. Characteristics of Young Adult Transgender Sample, Age 18-25 Years (N=143)

Variable	n	%
Age (years)	**M: 20.87**	**SD: 2.4**
Gender identity		
Female	10	7.0
Male	31	21.7
Non-binary/Third	87	60.8
Self-describe	15	10.5
Sexual Orientation		
Asexual/aromantic	17	11.9
Bisexual	23	16.1
Gay/lesbian	35	24.5
Pansexual	28	19.6
Straight/heterosexual	3	2.1
Other/queer/self-describe	37	25.9
Racial Identity		
White	108	75.5
Hispanic/Latino	7	4.9
Black/African American	7	4.9
American Indian/Alaska Native	0	0.0
Asian	3	2.1
Native Hawaiian/Pacific Islander	0	0.0
Mixed race	17	12.0
State of Residence		
Alabama	36	25.2
Arkansas	15	10.5
Florida	13	9.1
Georgia	17	11.9
Kentucky,	1	0.7
Louisiana	4	2.8
Mississippi	0	0.0
North Carolina	17	11.9
Oklahoma	2	1.4
South Carolina	3	2.1
Tennessee	0	0.0
Texas	20	14.0

Virginia	14	9.8
West Virginia	1	0.7
Type of High School Attended		
Public	103	72.0
Private	19	13.3
Other	15	10.5
Highest Level of Education		
Less than high school	4	2.8
High school diploma/GED	33	23.1
Some college credits	50	35.0
2-year college degree	12	8.4
4-year college (Bachelor's)	41	28.7
Master's degree	3	2.1
Doctorate	0	0.0
Employment Status		
Full-time work (30+ hrs/wk)	28	19.6
Part-time work (≤30 hrs/wk)	13	9.1
Unemployed	9	6.3
Full-/part-time student	38	26.6
Volunteer	1	0.7
Multiple positions	54	37.8
Household Income		
$0-$29,999	43	33.6
$30,000-$59,999	30	23.4
$60,000-$89,999	15	11.7
$90,000-$139,999	24	18.8
$140,000+	16	12.5
Insurance Coverage		
Insurance through a current/former employer/union (for you/a family member)	79	56.4
Insurance directly from an insurance company (by you or a family member)	23	16.4
Other health coverage plan or multiple	38	27.1

Table 2. Characteristics of High School Social Support and Discrimination Experiences and Health Risk Reduction Behaviors among Young Adult Transgender Sample, Age 18-25 Years (N=143)

Variable	n	%
HEALTH RISK REDUCTION BEHAVIOR VARIABLES		
Approximate date of most recent HIV test		
Within the the last 6 months	19	13.3
6-12 months ago	4	2.8
1-5 years ago	12	8.4
More than 5 years ago	3	2.1
Never tested	105	73.4
Covid-19 vaccination status		
Received at least one dose	127	89.4
Planning to vaccinate/no vaccinations	15	10.6
How often one smokes or uses tobacco		
Never	118	82.5
Once to a few times a year	14	9.8
Daily	11	7.7
How often one uses any form of marijuana		
Never	75	52.4
Once a year or less	21	14.7
A few times a year	18	12.6
A few times a month	9	6.3
A few times a week	9	6.3
Daily	9	6.3
SOCIAL SUPPORT AND DISCRIMINATION VARIABLES		
Faculty/staff support of LGBTQ+ students		
Very/somewhat supportive	51	57.5
Indifferent	34	25.4
Very/somewhat unsupportive	49	36.6
High school student support of LGBTQ+ students		
Very/somewhat supportive	11	8.3
Indifferent	51	38.3

Very/somewhat unsupportive	54	53.4
Presence of an LGBTQ+ organization or Gay-Straight Alliance (GSA)		
Yes	68	47.6
No	58	40.6
I don't know	8	5.6
Faculty support of an LGBTQ+ organization or Gay-Straight Alliance (GSA)		
Very/somewhat supportive	43	13.8
Indifferent	38	12.2
Very/somewhat unsupportive	100	32.2
Not applicable/I don't know	130	41.8
Avoided certain school activities to minimize LGBTQ+ discrimination		
No	55	41.7
Yes	78	59.1
Experienced being the target of rumors at high school because others believed you to be LGBTQ+		
No	48	36.1
Yes	85	63.9
Experienced access denial to appropriate bathrooms at high school because others believed you to be LGBTQ+		
No	99	75.0
Yes	32	25.0
Experienced bullying or harassment at high school because others believed you to be LGBTQ+		
No	61	45.9
Yes	72	54.1

Table 3. Associations between High School Social Support and Health Risk Reduction Behaviors among Young Adult Transgender Sample, Age 18-25 Years (N=143)

High School Social Support	Young Adult Health Risk Reduction Behavior			
HIV tested within 12 months				
		Yes	No	p-value
Presence of an LGBTQ+ organization or Gay-Straight Alliance (GSA)	Yes	23.5%	76.5%	0.01
	No	6.1%	93.9%	
		Yes	No	
Faculty/staff support of LGBTQ+ students	Yes	23.5%	76.5%	0.03
	No	9.6%	90.4%	
		Yes	No	
Faculty support of an LGBTQ+ organization or Gay-Straight Alliance (GSA)	Yes	27.6	90.2	0.04
	No	9.8	72.4	
Received at least 1 Covid-19 vaccination				
		Yes	No	p-value
Faculty/staff support of LGBTQ+ students	Yes	94.1%	5.9%	0.12
	No	85.4%	14.6%	
		Yes	No	
High School Student support of LGBTQ+ students	Yes	93.6%	6.4%	0.19
	No	86.0%	14.0%	
		Yes	No	
Faculty support of an LGBTQ+ organization or Gay-Straight Alliance (GSA)	Yes	96.6%	3.4%	0.09
	No	84.0%	16.0%	
Used tobacco within 12 months				

		Yes	No	p-value
Avoided certain school activities to minimize LGBTQ+ discrimination	Yes	87.3%	12.7%	0.18
	No	78.2%	21.8%	
		Yes	No	
Experienced being the target of rumors due to being LGBTQ+	Yes	89.6%	10.4%	0.09
	No	77.6%	22.4%	
		Yes	No	
High School Student support of LGBTQ+ students	Yes	89.4%	10.6%	0.11
	No	78.2%	21.8%	
Used marijuana within 12 months				
		Yes	No	p-value
Experienced bullying or harassment due to being LGBTQ+	Yes	41.0%	59.0%	0.09
	No	55.7%	44.3%	
		Yes	No	
Experienced access denial to appropriate bathrooms due to being LGBTQ+	Yes	54.1%	45.9%	0.05
	No	34.4%	65.6%	
		Yes	No	
Experienced being the target of rumors due to being LGBTQ+	Yes	37.5%	62.5%	0.05
	No	55.4%	44.6%	

Table 4. Adjusted Correlates of HIV Testing Within 12 Months Associations among Young Adult Transgender Sample, Age 18-25 Years (N=143)

Variable	Odds Ratio	95% Confidence Interval	p-value
Model 1			
Presence of an LGBTQ+ organization or Gay-Straight Alliance (GSA)	5.33	1.61-17.63	0.06
Model 2			
Faculty/staff support of LGBTQ+ students	2.90	1.09-7.83	0.03
Model 3			
Faculty support of an LGBTQ+ organization or Gay-Straight Alliance (GSA)	3.46	1.00-12.02	0.05

Note: Each model adjusted for minoritized race (1=white; 0=non-white) and type of high school attended (1=public; 0=private/other)

Table 5. Adjusted Correlates of Any Marijuana Use Associations among Young Adult Transgender Sample, Age 18-25 Years (N=143)

Variable	Odds Ratio	95% Confidence Interval	p-value
Model 1			
Experienced bullying or harassment at high school because others believed you to be LGBTQ+	0.55	0.27-1.10	0.09
Model 2			
Experienced access denial to appropriate bathrooms at high school because others believed you to be LGBTQ+	2.25	0.98-5.16	0.06
Model 3			
Experienced being the target of rumors due to being LGBTQ+	0.48	0.23-0.99	0.05

Note: Each model adjusted for minoritized race (1=white; 0=non-white) and type of high school attended (1=public; 0=private/other)