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Perceived Stigma Associated with the Passing of Anti-LGBTQ+ Bills: An Assessment of Stigma as a Relapse Factor for LGBTQ+ Individuals in Recovery from Substance Use

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A Thesis in the Field of Psychology

for the Degree of Master of Liberal Arts in Extension Studies

Harvard University

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Abstract

The LGBTQ+ population has a higher prevalence of substance use, potentially due to experiencing minority stress as marginalized population. Structural stigma in the form of state-level bills targeting the rights of the LGBTQ+ population may impact exposure to minority stress. A significant portion of the LGBTQ+ population who struggle with substance use have sought professional help to enter into recovery. Relapse from recovery leads to increased risk of overdose, and consequently, death. This study addressed perceived stigma in response to state-level anti-LGBTQ+ bills as a risk factor for relapse for LGBTQ+ individuals in recovery. LGBTQ+ individuals (N = 126) were recruited to complete measures of relapse status in the prior year, awareness of state-level anti-LGBTQ+ bills, perceived stigma, discrimination, anxiety, depression, and social support. While this study found no association between state-level anti-LGBTQ+ bill status and perceived stigma, perceived stigma was significantly associated with risk of relapse. Given this finding, more research is necessary to address perceived stigma through medical and mental health care to create LGBTQ+ affirming spaces within which these individuals can pursue a successful recovery.

Frontispiece

“It takes no compromise to give people their rights... it takes no money to respect the individual. It takes no political deal to give people freedom. It takes no survey to remove repression,” as stated by Harvey Milk (Salvo, 2024).

Dedication

To chosen family.

Acknowledgments

Great thanks to Dr. Alexandra Sedlovskaya, thesis director, and Dr. Christina Wood Baker, research advisor, for their unwavering and critical support throughout this study.

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Chapter I

Introduction

For centuries, LGTBQ+ individuals in the United States have endured and consequently coped with various forms of stigma as a minoritized community. Two types of stigma, structural and perceived, have demonstrated a negative impact on the mental health of minoritized communities (De et al., 2019; Hatzenbueler et al., 2015; Kota et al., 2020; Krueger et al., 2020). Many studies have supported the negative impact of structural stigma on the quality of life for individuals in the LGBTQ+ community, especially in reference to mental health and life satisfaction (Goldberg et al., 2024; Hatzenbuehler et al., 2014; Hatzenbuehler et al., 2015; Horne et al., 2022). Perceived stigma has also demonstrated a negative impact on the mental health of LGBTQ+ individuals (Moallef et al., 2022; Torales et al., 2022). Members of this community have resorted to various methods of coping as a means of managing the negative impact of structural stigma and perceived stigma on their mental health, including substance use (Goldberg et al., 2024; Hatzenbuehler et al., 2024; Wendi, 2016). Perceived stigma is a known risk factor for relapse for individuals in recovery from substance use (Abu-Ba'are et al., 2024), however, has yet to be studied as a risk factor for relapse specifically for individuals in recovery in the LGBTQ+ community. In 2020, 5.5 million LGB individuals over the age of 18 had known instances of substance use disorder (SAMHSA, 2020). As millions of members of the LGBTQ+ community are affected by substance use disorder, the impact of structural and perceived stigma on the recovery of LGBTQ+ individuals warrants further investigation.

The Impact of Structural Stigma on Minoritized Communities

According to Hatzenbuehler and Link (2014), stigma can be divided into micro and macro levels: individual and structural, respectively. While individual stigma solely focuses on direct interactions between individuals, structural stigma is applied at a greater societal level. Structural stigma can be operationalized in a variety of ways, from legislation that negatively affects minoritized communities to institutional policies (White Hughto et al., 2015). Within the last 20 years, the amount of research on the impact of structural stigma on minoritized communities has increased dramatically. Through this research, significant disparities in life satisfaction and the overall mental health of minoritized communities have been directly tied to various forms of structural stigma.

International instances of structural stigma have demonstrated direct impacts to the mental and physical health of LGBTQ+ individuals. Data gleaned from the EU LGBT survey in 2012 revealed that higher levels of structural stigma were associated with lower levels of life satisfaction for transgender individuals (Bränström & Pachankis, 2021). A study completed in India demonstrated that forms of structural stigma experienced by the LGBTQ+ community, including lack of civil rights protections and access to health care, were associated with increased perceived stigma. Saraff et al. (2022) further theorized that increased perceived stigma may have ties to an increase in health risks for LGBTQ+ individuals due to not seeking healthcare because of said perceived stigma. Vigilance is a known result of perceived stigma for LGBTQ+ individuals, thus leading to a decline in access to needed medical care (Brener et al., 2023). In addition, a study completed by Poteat et al. (2011) revealed the criminalization of homosexuality and consequent arrest of nine men demonstrated an increase in fear as well as a decrease in access to HIV

prevention and care. In Europe, a study completed in 2017 (Pachankis et al.) associated structural stigma with a deficiency of HIV prevention for sexual minorities, whether it was through knowledge, access, and precautionary actions. Additional research completed in 2018 (Perales & Todd) showed the negative impact of structural stigma on LGB individuals in Australia. As a measure of structural stigma, Perales and Todd obtained the number of individuals who voted against same-sex marriage per constituency during a plebiscite initiated regarding same-sex marriage and used data from constituencies with higher percentages of no voters as representation of structural stigma. The constituencies that had a higher percentage of voters against same sex marriage showed lower life satisfaction and worse physical and mental health for LGB individuals located in these constituencies. As made evident through these studies, structural stigma has the potential to affect both the physical and mental wellbeing of minoritized individuals.

Studies completed in the United States over the last decade have also illustrated the negative impact of structural stigma, specifically anti-LGBTQ+ legislation, on the mental and physical health of LGBTQ+ individuals. In 2018, a Massachusetts referendum potentially rolling back the rights of transgender, nonbinary, and gender-diverse (TNG) individuals, was introduced. The possibility of the referendum retracting protections for TNG individuals in public accommodations, such as bathrooms, resulted in a significant increase in anxiety for the TNG individuals who would have been affected by this referendum (Horne et al., 2022). During March of 2022, the Governor of Florida, Ron Desantis, passed the "Parental Rights Education Act," which forbade individuals, mainly educators, from discussing matters related to gender identity and

sexuality in an educational setting. Parents from the LGBTQ+ community showed significant emotional distress in response to the passing of the legislation and expressed concern over the impact of the legislation on the normalization of discrimination (Goldberg et al., 2024). These examples alone demonstrate not only a heightened emotional state in response to anti-LGBTQ+ legislation, but also an increased perception or fear of an increasingly hostile environment for members of the LGBTQ+ community.

Like the passing of anti-LGBTQ+ legislation, administrations known for anti-LGBTQ+ rhetoric had, and continue to have, a significant impact on the mental health of individuals from the LGBTQ+ community (Goldberg et al., 2024; Hatzenbuehler & Link, 2014; Horne et al., 2022). During Trump's administration from 2016 to 2020, many executive orders and policies introduced by the administration focused on restricting and limiting the rights of the LGBTQ+ community. In response to the perceived threat of the anti-LGBTQ+ stance of the Trump administration, members from the LGBTQ+ community experienced heightened negative emotions, such as anxiety, stress, and worry (Haas & Lannutti, 2024). For some individuals, the repeated exposure to anti-LGBTQ+ rhetoric from the Trump administration resulted in the development of chronic stress. Many LGBTQ+ individuals resorted to a variety of coping methods to attempt to assuage their heightened emotions during the span of this administration (Goldberg et al., 2024; Haas & Lannutti, 2024). While some coping methods used in response to these heightened emotions, such as self-care, can improve mental health, others, such as isolation and substance use, can negatively impact one's mental wellbeing and quality of life.

As the political climate fluctuated specifically in reference to discrimination and stigma against the LGBTQ+ community, so did the coping methods of the members of this community. From relying on social support such as friends and family members (Goldberg et al., 2024) to increased substance use (Hatzenbuehler et al., 2015), LGBTQ+ people of all ages adjusted their behaviors as their lives were impacted by structural stigma. Taking the significant number of LGBTQ+ individuals in the USA who are impacted by substance use disorder. Taking into consideration that 5.5 million LGB individuals over the age of 18 had known instances of substance use disorder in 2020 (SAHMSA, 2020), as well as minority stress associated with administrations known for anti-LGBTQ+ rhetoric and the passing of anti-LGBTQ+ legislation, further investigation is warranted on the impact of structural stigma on LGBTQ+ individuals who struggle with addiction.

In addition to negatively impacting the mental health and quality of life for minoritized individuals, structural stigma serves as a barrier to care for those who struggle with substance use. Due to structural and social inequities associated with racism, Black men in the United States are frequently exposed to isolation, trauma, and opioids. Because of these structural social inequities, these men are frequently unable to access the mental health support and medical care to treat the impact of mental health crises and addiction (Banks et al., 2025). One example of restricting access to mental health support and medical care needed for those who struggle with substance use and addiction would be lack of equitable access to detox treatment for methamphetamine (Pro, 2024). Fewer methamphetamine detox facilities exist in communities with higher populations of people of color in comparison to those with a majority white population,

despite the drug's increased presence in racialized communities. In addition, taking the lack of access to mental and medical care to treat addiction for both opioids and methamphetamine, the risk of overdose is heightened, thus putting the lives of those who are addicted to these substances at risk.

Policy-level stigma has been associated with increased minority stress and substance use for minoritized communities. In addition, policy-level stigma can restrict access to necessitated mental health and medical care to address increased substance use that can arise as a form of coping due to structural stigma. Without said access to care, risk of overdose, and potentially death, increases.

Perceived Stigma and Minority Stress

Akin to the macro level of stigma, the micro level of stigma can be divided into various forms that affect minoritized communities and consequently result in minority stress. Interpersonal discrimination, perceived stigma, and internalized stigma are all forms of micro stigma and result in minority stress. Interpersonal discrimination consists of interpersonal acts of violence or victimization on individuals due to being a part of a minoritized community (Baiocco et al., 2025). Perceived stigma is one's belief of being discriminated against or treated differently due to being a part of a minoritized community (Corrigan, 2004). Internalized stigma occurs when someone internalizes social stigma associated with the stigmatized characteristics of one's identity (Knight et al., 2003). Minority stress theory has raised awareness over the impact of stigma and prejudice on the mental health of minoritized communities. Both stigma and prejudice are core components of the minority stress model (Meyer, 2003). As perceived stigma is a

key contributor to minority stress, further exploration of additional contributors to minority stress as potential covariates is needed.

In the context of the impact of structural stigma on the mental health of minoritized communities, minority stress comes to the forefront of sociopsychological research. In 1981, Winn Kelly Brooks introduced the concept of minority stress through *Minority Stress and Lesbian Women*, a book dedicated to creating a framework illustrating the negative impact of macro stressors, mainly cultural, economic, and social, on the mental well-being and physical health of lesbian women in the United States. Through using this multilevel model, the impact of structural stigma on minoritized communities became evident. In 2003, Ilan H. Meyer added the concept of distal and proximal stressors to minority stress, where distal stressors are external or environmental, like prejudice and discrimination, and proximal stressors are internalized, like perceived stigma. Through this multi-layered framework addressing the role of internal and external stressors that minoritized communities experience, the widespread and severe impact of micro and macro stigma was brought to the forefront of sociopsychological research, underscoring even further the negative impact of minority stress on the mental and physical health of individuals from minoritized and stigmatized communities. As a result of research associated with minority stress, the association between structural stigma and perceived stigma became even more prevalent.

While minority stress focused on the direct impact of distal and proximal stressors on minoritized individuals, the Transactional Model of Stress created by Lazarus and Folkman (1984) addressed the coping responses of individuals when faced with stress. Through this model, Lazarus and Folkman defined psychological stress as a relationship

between an individual and their environment where the environment is assessed as taxing or exceeding in reference to the individual's available resources and consequently is seen an endangerment to their well-being. Expanding upon this concept further, Lazarus and Folkman explained there are two steps that take place when an individual experiences stress: cognitive appraisals and coping. A cognitive appraisal determines the likely impact a situation or experience may have on the individual's well-being and weighs the individual's confidence with being able to cope with that situation or experience based on available resources. Coping was divided into two categories by Lazarus and Folkman: problem-focused coping and emotion-focused coping. When faced with situations that were interpreted as having a likely solution, individuals would more often manage that situation through problem-focused coping, where they would directly address certain aspects of the situation that were leading to stress. In comparison to problem-focused coping, emotion-focused coping would take place when the individual interpreted the situation as out of their control, or something they were unable to change (Folkman and Lazarus, 1980). When navigating a stressful situation through emotion-focused coping, the individual would attempt to manage the emotions activated in response to the stressful situation. When faced with situations that activated distress or emotional states that were intensely negative, individuals with substance use disorder (SUD) and posttraumatic stress disorder (PTSD) would more frequently resort to emotion-focused coping through increased substance use (Staiger et al., 2009).

Through the framework of minority stress, one can see how the perception of one's minoritized identity as stigmatized can result in heightened emotional responses (Haas & Lannutti, 2024), a decrease in life-satisfaction (Bränström & Pachankis, 2021), a

negative impact to one's mental health (Horne et al., 2022), and the internalization of said stigma (Dorn-Medeiros & Doyle, 2018). LGBTQ+ individuals have resorted substance use and other coping methods to manage the negative impact of perceived stigma on one's mental health and life satisfaction, (Drydakis, 2022; Puckett et al., 2017).

Coping with Stigma Through Substance Use

In the face of varying levels of stigma, many studies have demonstrated increased substance use as a coping method for LGBTQ+ individuals (Dorn-Medeiros & Doyle, 2018; Goldberg et al., 2024; Gruskin et al., 2008; Hatzenbuehler et al., 2015; Huynh et al., 2022; Wendi, 2016). As increased substance use is confirmed as a coping method for stigma for members of the LGBTQ+ community, current research highlights the possibility of stigma as a risk factor for relapse for LGBTQ+ individuals in recovery.

Coping with Discrimination through Substance Use

Through the framework of minority stress, the impact of both discrimination and perceived stigma on the mental well-being of minoritized populations is evident. Minoritized individuals have resorted to coping with discrimination through increased substance use as means to mitigate its negative impact on their mental well-being (Gates et al., 2025; Mattingly et al., 2025; Rouhani et al., 2025). While there has been research on the association between discrimination and substance use, to my knowledge no studies have been completed assessing the association between discrimination and likelihood of relapse. As such, further examination of discrimination as a potential covariate between perceived stigma and likelihood of relapse is needed.

Stigma and Recovery from Substance Use

While there are several interpretations and definitions of recovery from addiction, the most pertinent for this study is the definition from the Betty Ford Institute: "a voluntarily maintained lifestyle characterized by sobriety, personal health, and citizenship" (Schwarzlose et al., 2007, p. 221). As recovery involves the cessation of substance use, the first year of recovery has the highest likelihood of relapse (Colwill, 2024). According to the Alcohol and Drug Foundation, relapse is defined as "when a person stops maintaining his or her goal of reducing or avoiding use of alcohol or other drugs and returns to previous levels of use" (*Relapse* 2025). Many studies focus on risk factors for relapse from substance use for the population of individuals in recovery, however, to my knowledge, no studies on risk factors for relapse have been completed solely focusing on a more vulnerable population: LGBTQ+ members in recovery.

In 2020, the National Institute on Drug Abuse reported a relapse rate of 40% to 60% for individuals treated for substance use disorder in the United States, however, no studies have specified relapse rates for LGBTQ+ individuals in recovery (National Institute on Drug Abuse, 2020). Increased substance use has been used as a coping method by LGBTQ+ individuals in the face of structural and perceived stigma (Drydakis, 2022; Hatzenbuehler et al., 2015; Puckett et al., 2017). As increased substance use is a known coping method for LGBTQ+ individuals when facing structural and perceived stigma, risk of relapse for LGBTQ+ individuals in recovery in the face of structural and perceived stigma needs to be assessed.

Many risk factors contribute to the possibility of relapse for individuals who are in recovery from substance use. Stress, negative affect, and environment are all known

risk factors for relapse (Cyr et al., 2023; Sinha, 2008, 2024; Tucker et al., 1990). Multiple studies have shown the negative impact a social environment can have on stress and affect for LGBTQ+ individuals (Goldberg et al., 2024; Haas & Lannutti, 2024; Hatzenbuehler & Link, 2014; Horne et al., 2022). In addition, perceived stigma has, for some individuals who struggle with addiction, led to isolation and avoidance of treatment for addiction. Isolation and avoidance of treatment are associated with increased risk of relapse (Arabshahi et al., 2023; Johnson et al., 2018; Waite et al., 2023). As stress, negative affect, environment, and perceived stigma negatively affect one's ability to remain sober while in recovery, a study assessing the relationship between these variables for LGBTQ+ individuals in recovery, an under-researched minoritized population, is justified.

Individuals from many stigmatized communities, including LGBTQ+ individuals, have been participants for studies focusing on risk factors for substance use. More specifically, perceived stigma has been studied and confirmed as a risk factor for relapse among individuals in recovery (Sonbol et al., 2023). While most of these studies focus on stigma in relation to the public perception of minoritized individuals (Bryan et al., 2017; Cochran et al., 2000; Gruskin et al., 2008), none have focused on perceived stigma in relation to structural stigma affecting individuals of a minoritized community in recovery. As discussed by Hatzenbuehler (2014), stigma research has mostly focused on individual stigma, demonstrating a great need for further research on the impact of structural stigma on the stigmatized. In addition, to my knowledge, no studies have been completed assessing structural and perceived stigma as potential risk factors for relapse for minoritized individuals in recovery. Through the combination of research on the impact

of structural and perceived stigma on the mental wellbeing of LGBTQ+ individuals, increased substance use as a coping method for stigma in the LGBTQ+ community, and perceived stigma as a risk factor for relapse, the opportunity for a study focusing on perceived stigma in relation to anti-LGBTQ+ bills as a risk factor for relapse in LGBTQ+ individuals in recovery was created.

Age, Socioeconomic Status, and Relapse

Various demographic characteristics are known as risk factors for relapse for individuals in recovery from substance use. Age is one such risk factor. Individuals younger than the age of 25 have a higher likelihood of relapsing than older adults (Fishman et al., 2020; Schuman-Olivier et al., 2014). In addition, having a lower income or socioeconomic status is a risk factor for relapse (Sohrabpour et al., 2024; Zhang & Wu, 2025). As both age and socioeconomic status are known risk factors for relapse, both need to be examined as potential covariates when assessing the relationship between perceived stigma and relapse.

Mental Health, Social Support, and Relapse

In addition to age and socioeconomic status, poor mental health and lack of social support are known risk factors for relapse. Individuals with co-morbid mood disorders and anxiety disorders have a higher likelihood of relapse than individuals without any mental health comorbidities (Bradizza et al., 2006; Schellekens et al., 2015). Lack of social support is another known risk factor for relapse, where individuals who had a lower sense of social support from friends and family had a higher likelihood of relapsing (Abdelaal et al., 2025; Shahid & Asmat, 2023). Due to these associations, co-morbid

mood disorders, anxiety, and social support also need to be explored as potential covariates.

Present Study

Relapse in recovery is associated with increased risk for overdosing and potentially death (ADF, 2024). As a drug or alcohol-related relapse can be life-threatening, understanding risk factors associated with relapsing in recovery is essential. Structural and perceived stigma are known to have a significant impact on the mental wellbeing of minoritized individuals, however, the impact of structural and perceived stigma on LGBTQ+ individuals in recovery has yet to be explored. A key element to managing recovery successfully is accessibility to resources, whether it be online communities, recovery groups, or rehabilitation facilities. The results from assessing perceived stigma in relation to the proposal or passing of anti-LGBTQ+ bills as a potential predictor for relapse for LGBTQ+ individuals in recovery may assist in informing addiction recovery resources and support available to members of these communities.

The aim of this study was to explore perceived stigma in relation to structural stigma as a potential predictor for relapse for LGBTQ+ individuals in recovery. The study addressed the research question of: is state-level anti-LGBTQ+ bill status a risk factor for relapse for LGBTQ+ individuals in recover? The study compared data collected on perceived stigma and relapse status for LGBTQ+ individuals in recovery located in states that had passed anti-LGBTQ+ bills in the year prior to the study with states that had not passed anti-LGBTQ+ bills. According to the research on the negative impact of structural and perceived stigma on the LGBTQ+ individuals completed thus far (Bryan et

al., 2017; Goldberg et al., 2024; Gruskin et al., 2008; Hatzenbuehler & Link, 2014; Hatzenbuehler et al., 2015; Horne et al., 2022) , the first hypothesis for this study was that states where anti-LGBTQ+ bills be associated with higher rates of perceived stigma. The second hypothesis for this study was that perceived stigma in relation to state-level anti-LGBTQ+ bill status predicted relapse in LGBTQ+ individuals in recovery. An a priori analysis was conducted using RStudio to ascertain a sample size that would be sufficient for testing the hypotheses of this study. The standard parameters of $\alpha = .05$ and power = .80 were used, resulting in a recommended sample of 123 participants. The selected effect size was ascertained based on previous studies completed addressing associations between minority stress and mental health (Cronin et al., 2021; Pachankis et al., 2008; Pellicane & Ciesla, 2022). Based off the data gleaned from the participants in this study, if the hypotheses were supported, targeted resources for LGBTQ+ individuals could be made available specifically in reference to facing perceived and structural stigma as a minoritized individual, thus potentially assisting with decreasing the possibility of risk of relapse for these individuals.

Chapter II

Method

The purpose of this study was to examine whether perceived stigma in relation to state-level anti-LGBTQ+ bills was associated with relapse for LGBTQ+ individuals in recovery. To achieve the purpose of this study, the participants were asked to provide demographic data including their location, LGBTQ+ identity, and recovery from substance use, in addition to completing an assortment of measures related to perceived stigma and mental health.

Participants

An a priori power analysis conducted in RStudio indicated an estimation of 123 participants would be sufficient to detect a medium-to-large effect size ($\alpha = .05$, power = .8). 126 participants were ultimately recruited for the study. Each participant was older than 18, identified as a member of the LGBTQ+ community, identified as in recovery from substance use, had a primary residence in the United States, and had spent at least one year at this location. Participants were excluded if they were not in recovery from substance use, had been in recovery for less than a year, or failed to document which state they lived in. Four were in recovery for less than a year, and one participant listed their state as "50". Consequently, all of these participants were excluded. After exclusions, the final analytic sample consisted of N = 126 participants, 63 from states that had passed or proposed anti-LGBTQ+ legislation in the previous year and 63 from states that had not passed or proposed anti-LGBTQ+ legislation in the previous year.

Measures

Participants were asked to provide demographic data in relation to their location, gender identity, sexuality, socioeconomic status, political affiliation, and recovery from substance use. Participants were asked to provide the state they had resided in for the previous year to confirm whether state-level anti-LGBTQ+ bills had been passed where they resided. 63 participants were recruited from states that had passed anti-LGBTQ+ bills in the year prior to the study and 63 participants were recruited from states that had not passed anti-LGBTQ+ bills. The amount of time the participants resided in their state was obtained and addressed as a potential covariate as length of residence can coincide with exposure to the sociopolitical environment of said state, thus potentially impacting the participants' experiences with perceived stigma. The mean length of residence for all of the participants was 23.1 years (Table 2). Due to the expansive number of gender identities available, participants were asked to describe their gender identity without being provided pre-selected categories to allow them to self-identify beyond predefined labels. The resulting data was divided into three categories: cisgender man, cisgender woman, and other (Table 2). The identities labeled as "other" were placed into one category as only 25 individuals fell under this category. These individuals identified as nonbinary, transgender, genderqueer, and agender. Sexual orientation was divided into pre-defined categories including gay, lesbian, bisexual, and other (Table 2). The other option was created to allow for identities not explicitly listed, including heterosexual, which is less frequent for LGBTQ+ individuals. Heterosexual was considered as an option as it is known to be a sexual identity among some transgender and gender-diverse individuals. The participants were also asked to provide their household income to assess

socioeconomic status, as lower socioeconomic status is a known risk factor for addiction (Baptiste-Roberts & Hossain, 2018). As political affiliation can affect one's experience with social acceptance and consequently affect one's experiences with perceived stigma, the participants were asked to confirm their political affiliation as republican, democrat, independent, or other.

The potential association between perceived stigma and the passing of state-level anti-LGBTQ+ bills was initially assessed. Then the relationship between perceived stigma and relapse occurrence with the passing of state-level anti-LGBTQ+ bills as a moderator was reviewed. Discrimination, mood, and perceived social support were examined as potential covariates. To further measure these variables as well as potential covariates, the participants completed five questionnaires (Table 1). The questionnaires assessed their confidence in resisting substance use, perceived stigma, mood, and perceived social support.

Relapse Status and Number of Occurrences

To assess relapse status for the year prior to the study being taken, the participants were prompted to answer "yes" or "no" to whether they had a relapse in the previous year. They were also asked the number of times they relapsed in the previous year; however, the relapse variable was only operationalized dichotomously as the focus of the study was relapse occurrence rather than frequency, and some participants were unable to provide exact dates of their relapses.

Variable	Assessment
Confidence in Resisting Use	Brief Situational Confidence Questionnaire (Breslin et al., 2000)
Perceived Stigma	Daily Heterosexist Experiences Questionnaire (Balsam, Beadnell, & Molina, 2013)
Perceived Stigma	Everyday Discrimination Scale (Williams, Jackson, & Anderson, 1997)
Mood	Patient Health Questionnaire-4 (Kroenke et al, 2009)
Perceived Social Support	Multidimensional Scale of Perceived Social Support (Zimet et al., 1988)

Figure 1. Assessments Overview

Awareness of Legislation

To assess if the participant was aware of any anti-LGBTQ+ bills being passed in their state during the last year, they were asked to verify that information with a yes or no response. If their answer was yes, they were then asked to provide what bills they were aware of, and how much they personally felt affected by this bill. The question they were asked was: Please rate the degree to which your life was affected in relation to the passing of this bill. The response scale ranged from 1 (*not at all)* to 7 (*extremely affected*).

Relapse Occurrence

To assess this variable, participants were asked a series of questions addressing any relapses that may have taken place in the year before they completed the survey. The participants were asked the following four questions: please confirm any relapses that

may have taken place during the last year, how many times did you relapse, and when did those relapses take place?

Confidence in Resisting Use

This variable was measured through the Brief Situational Confidence Questionnaire (BSCQ). This questionnaire is an eight-item measure that addresses participants' confidence in resisting using substances or drinking alcohol in response to these specific situations. This measure was initially selected to assess as a potential protective factor as confidence in one's ability to manage stressful situations has an association with likelihood of relapse. Each scale within the questionnaire served as a stand-alone indicator of confidence in that moment rather than a retrospective measurement. As these items assessed momentary confidence at the time of survey completion rather than confidence throughout the prior year, the measure was not included in the final statistical analyses.

Perceived Stigma

Perceived stigma was measured through the Daily Heterosexist Experiences Questionnaire (DHEQ). The Daily Heterosexist Experiences Questionnaire is a 50-item questionnaire with 9 subscales. The 50 questions revolve around the lived experience of being a member of the LGBTQ+ community and measures the frequency of stigma-related experiences for LGBTQ+ individuals. The questionnaire can be scored in two ways: occurrence and distress. Higher occurrence scores indicate a higher number of experiences of perceived stigma. A study of 1,057 participants assessed the reliability of this questionnaire with a resulting reliability rating of Cronbach's alpha = .93 (Landes et

al., 2023). The DHEQ had a Cronbach's alpha = .96 for this study. The questionnaire has also demonstrated construct validity (Balsam et al., 2013).

Discrimination

As discrimination is conceptually related to perceived stigma as a component of minority stress, it was included as a covariate. To measure the level of discrimination the participants experienced, they completed the Everyday Discrimination Scale (EDS). The Everyday Discrimination Scale is a 10-item questionnaire that addresses the participants' experiences involving discrimination and perceived stigma. Each question addresses specific instances the participant may experience because of being a part of a stigmatized community and documents the frequency of each experience. A follow-up section offers several categories with which the participant can identify specifically in relation to various stigmatized communities. Both sexuality and gender identity were offered as individual categories in this section. The scale is scored according to the frequency of experiences the participants have in relation to discrimination. A study of 120 participants assessed the reliability of this questionnaire with a resulting reliability rating of Cronbach's alpha = .87 (Clark et al., 2004). The EDS had a Cronbach's alpha = .93 for this study. The questionnaire has also demonstrated convergent validity (Gonzales et al., 2016).

Mood

To rule out potential confounding factors for risk of relapse such as anxiety or depression, the participants completed the Patient Health Questionnaire-4 (PHQ-4). The PHQ-4 is a four-item questionnaire that addresses any feelings of anxiety or depression

the participant may have experienced over the previous two weeks. The participants were advised to select a response varying from “not at all” to “nearly every day” to address frequency of occurrence. The total score, as well as the subscale scores for anxiety and depression separately, indicates the severity with which anxiety and depression impacts the daily life of the participant. A study of 5,003 participants assessed the reliability of this questionnaire with a resulting reliability rating of Cronbach’s alpha = .82. The PHQ-4 had a Cronbach’s alpha = .88 for this study. The questionnaire has also demonstrated construct validity (Löwe et al., 2010).

Perceived Social Support

To rule out perceived social support as a potential confounding factor for risk of relapse, the participants completed the Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS is a 12-item questionnaire that measures the participant’s perception of support from significant others, family, and friends. The participants were able to select a response for each question varying from “very strongly disagree” to “very strongly agree” to address their perception of how much they were able to rely on their social network. The score for this questionnaire is determined through the mean of all twelve items or the individual mean for each subscale of significant other, family, and friends. The mean score of all twelve items was used. A study of 267 participants assessed the reliability of this questionnaire with a resulting reliability rating of Cronbach’s alpha = .90. The MSPSS had a Cronbach’s alpha = .93 for this study. The questionnaire has also demonstrated divergent validity (Kler et al., 2023).

Design

This study was a cross-sectional between-group study that assessed relapse occurrence among LGBGQ+ individuals who lived in states that either had or had not passed anti-LGBTQ+ bills in the year prior to the completion of the questionnaires.

Procedure

Recruitment began after approval from the Harvard Committee on the Use of Human Subjects. Participants were recruited through Prolific, an online service specifically used to recruit and pay individuals to complete surveys. Through this service, the participants were paid an allotted amount for completing the questionnaires. The questionnaires were administered online through Psytoolkit, a survey-taking service offered in connection to Prolific. When accessing Prolific, the participants selected if they wanted to participate in the study. After selecting the link to participate in the study, the participants were provided a list of inclusion criteria for the study: identifying as a member of the LGBTQ+ community, identifying as in recovery, and having a primary residence in one state in the US during the last year. The IRB confirmed the study qualified for a consent waiver, which was made available for the review by the participant once they clicked on the link to access the study. The participants were then directed to answer a few demographic questions addressing their age, the state they live in, their gender identity, and sexuality. If the participant declined to provide their gender identity or sexuality, they were able to leave the survey. After providing the requested demographic information, the participants were given 30 minutes to complete the online survey. The survey addressed confidence in resisting use, perceived stigma, experiences of discrimination, mood, and perceived social support. The order of the survey went as

follows: the Brief Situational Confidence Questionnaire, Daily Heterosexist Experiences Questionnaire, Everyday Discrimination Scale, Patient Health Questionnaire-4, and Multidimensional Scale of Perceived Support. Participants were able to discontinue and exit the questionnaires at any point. At the end of the survey, the participants were directed to resources that provided support specifically tailored to the material addressed in the questionnaires, specifically LGBTQ+ related crises, discrimination-reporting, and recovery support sites.

Data Analysis

After collecting the responses and data from the completed survey, statistical analyses of the results were conducted using R in RStudio. These data were initially examined to exclude any incomplete or missing responses, as well as any outliers. Descriptive analyses for all variables and any pertinent demographic data were reported, including mean, standard deviation, and distribution. In addition, primary and secondary analyses were completed.

Primary Analyses

The question for this study was: does perceived stigma in response to the passing of anti-LGBTQ+ bills predict relapse for LGBTQ+ individuals who are in recovery? To test this, a t-test was conducted to assess the association between state-level anti-LGBTQ+ bill status and DHEQ occurrence scores. In addition, a chi-square test was conducted to assess the association between relapse status and state-level anti-LGBTQ+ bill status. Finally, a logistic regression was conducted to assess the association between DHEQ occurrence and relapse status.

To examine awareness of state-level anti-LGBTQ+ bill status as a confounding variable, a Firth logistic regression was conducted to assess if the relationship between DHEQ occurrence and risk of relapse was moderated by awareness of state-level anti-LGBTQ+ bill status.

Secondary Analyses

Several secondary analyses were completed to assess any potential relationships between the dependent variables and covariates. Correlational analyses were completed to review any potential relationships among age, length of residence, DHEQ occurrence, DHEQ distress, EDS, PHQ-4, and MSPSS. In addition, chi-square tests were conducted to assess any potential differences in categorical distribution for sexual orientation, gender identity, socioeconomic status, political affiliation, or relapse status within the previous year according to state-level anti-LGBTQ+ bill status. T-tests were also conducted to rule out any potential association with relapse status for both age and years of residence individually.

In addition, a series of independent sample t-tests were conducted to assess differences in predictor variables and potential covariates between participants who experienced a relapse during the previous year and participants who did not. Age, length of residence in years, DHEQ occurrence score, DHEQ distress score, EDS score, PHQ score, and MSPSS score were all assessed to explore group differences for participants who had experienced a relapse in comparison to those who did not.

Given prior research suggesting associations between discrimination and mental health outcomes among minoritized populations, the relationship between state-level anti-LGBTQ+ bill status, discrimination, and relapse needed to be assessed. Taking this into

consideration, to determine if results from the Everyday Discrimination Scale had a moderating effect on the relationship between state-level anti-LGBTQ+ status and likelihood of relapse in the previous year, a logistic regression analysis was conducted.

As studies have shown the positive correlation between social support and mood, a correlation analysis was conducted to assess the relationship between PHQ-4 scores and MSPSS scores.

Chapter III

Results

The hypothesis for this study was perceived stigma in relation to state-level anti-LGBTQ+ bill status predicted relapse in LGBTQ+ individuals in recovery. To test the hypothesis and assess the potential impact of a variety of covariates including political affiliation, length of residency, socioeconomic status, discrimination, anxiety, depression, and social support, descriptive analyses, bivariate analyses, and multivariate analyses were conducted.

Participant Characteristics

All survey responses were reviewed to ensure no data were missing, and continuous variables were also reviewed for any non-numeric responses. Two NA responses under years of residence were documented and coerced into numeric form. A correlation table was created to assess any associations between the continuous variables in consideration of future regression analysis (Table 1). Histograms of all continuous variables were also reviewed, including age, years of residence, Daily Heterosexist Experiences Questionnaire (DHEQ) occurrence scores, DHEQ distress scores, Everyday Discrimination Scale (EDS) scores, Patient Health Questionnaire-4 (PHQ4) scores, and Multidimensional Scale of Perceived Social Support (MSPSS) scores. Any visible skewness in the distribution for each variable reflected the nature of each variable. For example, EDS scores showed a right skew, which is appropriate considering the LGBTQ+ status of the participants (Smith & Norris, 2025). No extreme outliers or ceiling and floor effects were noted that would violate assumptions associated with any

future analyses. Variance inflation factors were used to evaluate multicollinearity, and the assessment confirmed that all continuous variables were within the acceptable multicollinearity range (VIF < 5). As such, all continuous variables were maintained as is, beyond coercion into numeric form for the two NA responses.

As the initial analysis for the research question was contingent on state-level anti-LGBTQ+ status, categorical demographics were reviewed and divided according to state-level anti-LGBTQ+ bill status and compared to the full sample (Table 2). The sample consisted of 126 participants. For states where no anti-LGBTQ+ bills were passed, the gender identity categories with the highest number of participants were cisgender men (30.2%) or those who identified as "other" (23.8%). In comparison, for states where anti-LGBTQ+ bills were passed, most participants were cisgender women (68.3%). For sexuality, most participants, regardless of state-level anti-LGBTQ+ bill status, were bisexual, totaling to 63.5% for the entire sample. The remaining participants had similar distributions despite state-level anti-LGBTQ+ bill status, totaling to 10.3% identifying as lesbian, 9.5% as gay, and 10.3 % as queer. Regarding socioeconomic status, participants located in states where anti-LGBTQ+ bills were not passed had higher reported annual incomes of $100,000 or more (30.2%), in comparison to states where anti-LGBTQ+ bills were passed (14.3%). Participants located in states where anti-LGBTQ+ bills were passed most frequently reported $20,000 to $59,999 as their income range. Both groups had similar distributions of political affiliation, and for the total sample most participants identified as Democrat (41.3%) or Independent (33.3%). As all participants identified as LGBTQ+, awareness of state-level anti-LGBTQ+ bill status was another covariate to be examined. Participants located in states that had not passed anti-LGBTQ+ bills were

more likely to confirm that no anti-LGBTQ+ bills were passed in their state (55.8%). A higher percentage of participants who lived in states that did pass anti-LGBTQ+ bills reported being aware of the passing of those bills (59.2%). For the full sample, most participants reported not being aware of the passing of anti-LGBTQ+ bills (61%). Age and years of residence for participants were also compared according to state-level anti-LGBTQ+ bill status. The mean age and length of residence for both categories were nearly identical (35.83 years and 23.83 years, respectively).

Table 1. Descriptive Statistics and Correlations for Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Age	35.83	9.2	-	0.37***	0.13	0	0.1	-0.22*	0.13
2. Length of Residence	23.83	14.18	-	-	-0.08	-0.02	0.05	-0.11	-0.03
3. DHEQ Occurrences	23.13	12.49	-	-	-	0.72***	0.01	-0.02	0
4. DHEQ Distress	1.84	0.67	-	-	-	-	-0.14	0.19*	-0.11
5. EDS	9.59	1.17	-	-	-	-	-	-0.08	0.24***
6. PHQ-4	10.05	3.32	-	-	-	-		-	-0.4***
7. MSPSS	4.86	1.28	-	-	-	-	-	-	-

Note. *M* = mean; *SD* = standard deviation. Sample sizes (N) vary slightly due to missing data.

Table 2. Categorical Demographics by Anti-LGBTQ+ Bill Status

Demographics	No Anti-LGBTQ+ Bill(s) Passed		Yes Anti-LGBTQ+ Bills Passed		Full Sample	
	n	%	*n*	%	*n*	%
Gender Identity						
Cisgender Man	19	30.2	10	15.9	29	23
Cisgender Woman	29	46	43	68.3	72	57.1
Other	15	23.8	10	15.9	25	19.8
Sexuality						
Lesbian	5	7.9	8	12.7	13	10.3
Gay	7	11.1	5	7.9	12	9.5
Bisexual	39	61.9	41	65.1	80	63.5
Queer	9	14.3	4	6.3	13	10.3
Other	3	4.8	5	7.9	8	6.3
SES						
Less than $20,000	12	19	8	12.7	20	15.9
$20,000–$39,999	10	15.9	17	27	27	21.4

Demographics	No Anti-LGBTQ+ Bill(s) Passed		Yes Anti-LGBTQ+ Bills Passed		Full Sample	
$40,000–$59,999	6	9.5	12	19	18	14.3
$60,000–$79,999	11	17.5	11	17.5	22	17.5
$80,000–$99,999	3	4.8	6	9.5	9	7.1
$100,000 or more	19	30.2	9	14.3	28	22.2
Prefer not to answer	2	3.2	0	0	2	1.6
Political Affiliation						
Democrat	27	42.9	25	39.7	52	41.3
Republican	12	19	10	15.9	22	17.5
Independent	19	30.2	23	36.5	42	33.3
Other	5	7.9	5	7.9	10	7.9
Awareness of Bills						
No	43	55.8	34	44.2	77	61

Demographics	No Anti-LGBTQ+ Bill(s) Passed		Yes Anti-LGBTQ+ Bills Passed		Full Sample	
Yes	20	40.8	29	59.2	49	39

Note. $N = 126$

Participant Characteristics and Anti-LGBTQ+ Bill Status

Additional analyses were conducted to assess potential associations between participant characteristics and state-level anti-LGBTQ+ bill status that may impact the testing of the hypotheses. Chi-square tests were conducted to assess any potential differences in categorical distribution for sexual orientation, gender identity, socioeconomic status, political affiliation, or relapse status within the previous year according to state-level anti-LGBTQ+ bill status (Table 3). No significant associations were found for sexual orientation, socioeconomic status, political affiliation, or relapse status (all $p > .05$). A signification association was found for gender identity, warranting further analysis. To further assess specific group differences, a post-hoc pairwise test using Bonferroni correction was conducted. The comparisons conducted through the pairwise test showed that there were no specific gender identity differences that were statistically significant. As no results were found to be statistically significant regarding the relationship between the demographic data from this survey and the state-level anti-LGBTQ+ bill status, no further analyses were warranted for age, length of residence, gender identity, sexuality, socioeconomic status, and political affiliation in the context of state bill status.

Table 3. Chi-Square Summary Table for State-Level Anti-LGBTQ+ Bill Status

Characteristics	$\chi 2$	*df*	*p*	*n*
Gender Identity	6.52	2	0.038	126
Sexuality	3.5	4	0.478	126
Socioeconomic Status	11.19	6	0.083	126
Political Affiliation	0.64	3	0.887	126
Awareness of Bills	2.14	1	0.144	126
Relapse Status	0.03	1	0.858	126

T-tests were conducted for age, length of residence, DHEQ occurrences score, DHEQ distress score, EDS score, PHQ4 Score, and MSPSS score in relation to state-level anti-LGBTQ+ bill status (Table 4). Of the data collected, DHEQ occurrences had the most notable difference between groups according to state-level anti-LGBTQ+ bill status, where participants who were living in states that had not passed anti-LGBTQ+ bills had a mean DHEQ occurrence score of 21.86, whereas participants who were living in states that had passed anti-LGBTQ+ bills had a mean DHEQ occurrence score of 24.41. An independent samples t-test was conducted for all applicable variables, including the previously mentioned DHEQ occurrence score, and none of the results were significant.

Table 4. T-Test Results for Continuous Variables and Anti-LGBTQ+ Bill Status

Variable	No	Yes	Statistic	*df*	*p*	Cohen's *d*
	Mean	Mean				
Age	35.83	35.83	0	121	1	0
DHEQ Occurrence Score	21.85	24.41	-1.15	118.77	0.25	-0.20
DHEQ Distress Score	1.8	1.89	-0.73	116.37	0.46	-0.13
EDS Score	9.48	9.7	-1.06	110.23	0.29	-0.19
PHQ4 Score	9.90	10.19	-0.48	122.26	0.63	-0.09
Length of Residence	23.81	23.86	-0.02	121.64	0.98	0
MSPSS Score	4.81	4.91	-0.44	119	0.66	-0.08

To assess the relationship between participant characteristics and relapse status, t-tests as well as chi-square tests were conducted. T-tests were conducted to explore any potential association with relapse status for both age and years of residence individually. No significant association was found for either variable. The mean age for both groups were close (36.76 for those who did not experience a relapse, 34.66 for those who did), $p = .21$. The mean length of residence for both groups were also close (25.25 years for those who did not experience a relapse, 22.11 for those who did) and $p = .21$. Chi-square tests were conducted to assess any associations between categorical demographic variables and relapse status (Table 5). The categorical demographic variables assessed were sexuality, gender identity, socioeconomic status, and political affiliation. A

significant association was found between gender identity and relapse status ($p < .05$), indicating that relapse status varied according to gender identity, as indicated through the Chi-square test results in Table 6. In addition, a significant association was found between sexuality and relapse status, indicating varied prevalences between sexuality and relapse status. The significant association found between sexuality and relapse status should be reviewed with caution due to sparse cell counts. No significant associations were found between relapse and socioeconomic status, state-level anti-LGBTQ+ bill status, or political affiliation.

Table 5. Chi-Square Test Results between Categorical Variables and Relapse Status

Predictor	Statistic	*p*	Method
Gender Identity	15.39	0.0005	Chi-squared
Sexuality		0.0015	Fisher's Exact
Socioeconomic Status		0.9362	Fisher's Exact
Political Affiliation		0.3422	Fisher's Exact
Awareness of bills	1.4	0.236	Chi-squared

To continue to assess whether sexuality or gender identity predicted the likelihood of relapse in the previous year, a binary logistic regression was conducted. The overall model had a slightly better fit than the null model (residual deviance = 161.31, AIC = 175.31), showing that the various demographic data were responsible for a small proportion of variance for the likelihood of relapse. None of the predictor variables were statistically significant. For gender identity, participants who identified as “other” had a 38% greater likelihood of relapse in comparison to cisgender participants, however, this

effect wasn't significant (OR = 1.38, 95% CI [0.48, 4.00], p = .549). The association between sexuality and likelihood of relapse also wasn't statistically significant. No multicollinearity was detected (all VIFs < 1.5), and no influential observations were found. The results of these analyses further demonstrate that the demographic factors associated with this study were not strong predictors of relapse.

Independent sample t-tests were conducted to assess differences in potential covariates between participants who experienced a relapse during the previous year and participants who did not (Table 6). DHEQ occurrence scores for participants who did experience a relapse (M = 25.86) were significantly higher than for those who did not (*M* = 20.96), *p* = .029. No significant differences were found for the remaining variables of age, DHEQ Distress Score, EDS Score, PHQ4 Score, Length of Residence, or MSPSS Score. To determine if DHEQ occurrences and DHEQ distress had a positively correlated relationship and explore a potential issue with collinearity, a correlation analysis was conducted. The two variables had a strong positive correlation (r = 0.72, t(124) = 11.55, *p* < 0.001, 95% CI [.62, .79], showing that as the number of DHEQ occurrences increased, so did the level of DHEQ distress, thus indicating a potential issue with collinearity for any further analyses. This was addressed through running a Firth's penalized logistic regression, as seen in the next section.

Table 6. T-Test Results Comparing Continuous Variables and Relapse Status

	No Relapse	Yes Relapse	*t*	*df*	*p*
	Mean	Mean			
Age	36.76	34.66	1.27	117.0681269	0.206
Length of Residence (years)	25.25	22.11	1.25	121.7936959	0.214
DHEQ Occurrence Score	20.96	25.86	-2.21	114.4205129	0.029
DHEQ Distress Score	1.79	1.91	-0.97	119.1062124	0.333
EDS Score	9.76	9.38	1.71	75.91316623	0.091
PHQ Score	9.91	10.21	-0.51	121.8724871	0.613
MSPSS Score	4.83	4.89	-0.28	122.8880645	0.782

Testing the Hypotheses

To test the hypothesis, any potential associations between state-level anti-LGBTQ+ status, DHEQ occurrence score, and likelihood of relapse needed to be assessed. The initial hypothetical interaction was a potential association between state-level anti-LGBTQ+ bill status and DHEQ Occurrences score. As indicated in Table 5, the mean of DHEQ occurrences in states that had passed anti-LGBTQ+ bills in the previous year was slightly higher than those that had not, however the t-test result was not found to be statistically significant.

The chi square test results for relapse status and state-level anti-LGBTQ+ bill status in Table 4 were also not statistically significant, thus ruling out state-level anti-LGBTQ+ bill status as a potential covariate between DHEQ occurrence and state-level anti-LGBTQ+ bill status. As state-level anti-LGBTQ+ bill status did not have an association with DHEQ occurrence or relapse status, an analysis directly addressing DHEQ occurrence and relapse status alone was warranted.

A logistic regression was calculated to assess whether DHEQ occurrence predicted relapse (Table 7). DHEQ occurrence was found to have a significant association with likelihood of relapse (B = .03, SE = 0.01, z = 2.16, p = .031). In addition, higher DHEQ occurrences were associated with increased likelihood of relapse, where a one unit increase in occurrence was found to be associated with a 3.3% increase in likelihood of relapse (OR = 1.03).

Table 7. Logistic Regression Analysis of DHEQ Occurrence

Predictor	*B*	*SE*	Z	*p*	*OR*	95% *CI* For *OR*
Intercept	−.98	0.39	−2.47	.013	0.38	[0.18, 0.78]
DHEQ Occurrence	0.03	0.01	2.16	.031	1.03	[1.00, 1.06]

Due to the strong correlation between DHEQ occurrences and DHEQ distress level, an independent samples t-test was conducted to review any potential differences in DHEQ distress severity between participants who did or did not experience a relapse in the previous year. The test results showed that distress severity was not significantly different between those who did not experience a relapse (M = 1.79) and those who did (M = 1.91), t (119.11) = -.97, 95% CI [-.35, .12].

The secondary portion of the analysis assessed potential connections between DHEQ occurrence, awareness of state-level anti-LGBTQ+ status, and likelihood of relapse in the previous year. A Firth logistic regression was calculated to assess if the relationship between DHEQ occurrence and likelihood of relapse was moderated by awareness of state-level anti-LGBTQ+ status. Awareness of state-level anti-LGBTQ+ status was not found to be significant predictor of relapse (OR = 1.17, 95% CI [0.55, 2.48], p = .684).

A logistic regression analysis was conducted to assess if awareness of the passing of anti-LGBTQ+ bills and all other covariates predicted relapse, absent of DHEQ occurrences and DHEQ distress. Participants who identified as gay and bisexual had higher odds of relapse than… (OR = 29.7, 95% CI [2.08, 4521.7], p = .009; OR = 28.2, 95% CI [3.17, 3724.0], p < .001). In addition, participants who identified as cisgender

women had lower odds of relapse than… (OR = .27, 95% CI [.08, .77], p = .014). Those who identified as "Other" for political affiliation had higher odds of relapse than… (OR = 5.47, 95% CI [1.05, 35.6]. [p =.044). The remaining potential predictors were ruled out as non-significant in association with likelihood of relapse.

Exploratory Analyses

To determine if results from the Everyday Discrimination Scale had a moderating effect on the relationship between state-level anti-LGBTQ+ status and likelihood of relapse in the previous year, a logistic regression analysis was conducted. Neither state-level anti-LGBTQ+ status nor the results from the Everyday Discrimination scale were found to be significantly associated with likelihood of relapse ($p > .05$).

To examine a potential association between social support and mental health, a correlation analysis was conducted between PHQ-4 scores and MSPSS scores. PHQ-4 scores had a negative correlation with MSPSS scores (r = -.40, 95% CI [-.54, -.25] $p < .001$), indicating that the higher the score was for perceived social support, the less psychological distress the participant experienced.

Chapter IV

Discussion

In the face of structural and social stigma, minoritized individuals are caught in a vicious cycle of experiencing external stigma and internalizing said stigma, resulting in minority stress (Flentje et al., 2021; Martino et al., 2025; Nguyen et al., 2024). Sociopsychological research has focused on the impact of structural stigma on minority stress for LGBTQ+ and other intersecting minoritized identities, however very little research has focused on the relationship between perceived stigma, a specific component of minority stress, in response to structural stigma, and its effect on the well-being of the impacted minoritized community. Given the significant increase in research associated with the negative impact of recent administrations on the mental health of LGBTQ+ individuals and the gap in research for LGBTQ+ individuals in recovery, this study focused on structural stigma measured through the experience of LGBTQ+ individuals in recovery, state-level anti-LGBTQ+ bills status, and relapse occurrence for those LGBTQ+ individuals during the period of one year.

The purpose of this study was to assess two relationships: that between perceived stigma and state-level anti-LGBTQ+ bill status, and that between perceived stigma and relapse rates. The first hypothesis for this study was that there would be increased perceived stigma, or DHEQ occurrences, in response to the passing of state-level anti-LGBTQ+ bills. The second hypothesis was that the increased DHEQ occurrences in response to the passing of state-level anti-LGBTQ+ bills would be a risk factor for relapse for LGBTQ+ individuals in recovery. In addition to testing these hypotheses, the study aimed to determine if distress measured by the DHEQ added further explanation to

relapse risk beyond number of occurrences and if awareness of the passing of state-level anti-LGBTQ+ bills moderated these associations. Beyond these analyses, the study also sought to assess any potential demographic characteristics as potential predictors. This study aimed to review any potential confounding factors that may impact any association between DHEQ occurrences in response to state-level anti-LGBTQ+ bills and relapse status for LGBTQ+ individuals in recovery.

After the analyses were completed, the initial hypothesis stating that state-level anti-LGBTQ+ bill status would have an association with DHEQ occurrences failed to be proven. However, the number of DHEQ occurrences were found to be a predictor for relapse. In addition, the amount of distress associated with the DHEQ occurrences did not independently predict relapse. Finally, awareness of state-level anti-LGBTQ+ bills did not alter the relationship between DHEQ occurrences and relapse. The remaining analyses did not provide any additional potential predictors for DHEQ occurrences or relapse.

Participants for this study were more likely to report relapses when they had higher DHEQ occurrences. The frequency of DHEQ occurrences serves as an indication of exposure to instances of perceived stigma, where the participants interpreted another individual's actions as a negative reaction to the participant's stigmatized LGBTQ+ identity. Minority stress theory asserts that two types of stressors, proximal and distal, contribute to the experience of minority stress for minoritized individuals. While distal stressors describe more external forms of stigma that minoritized individuals may experience, like discrimination, proximal stressors are interpersonal or related to one's relationship with oneself, like perceived stigma. Through the findings from this study,

proximal minority stressors such as perceived stigma may be a greater risk factor for relapse than distal stressors such as the passing of anti-LGBTQ+ bills, especially when exposure to said proximal stressor is frequent and cumulative.

The cumulative effect of instances of perceived stigma can contribute to the development of chronic minority stress (Frost & Meyer, 2023). While the DHEQ accounts for the number of occurrences of perceived stigma and severity of distress in response to each instance, the questionnaire does not account for chronic stress in response to the accumulation of these instances over time. In addition, while the PHQ-4 may be comprehensive in its measurement of anxiety for the participants, the questionnaire specifically states that the participant must respond according to how they had been feeling for the previous two weeks alone, rather than during the year prior to taking the survey. While the number of DHEQ occurrences were found to be a predictor of relapse from substance use, distress in response to these individual occurrences did not have a statistically significant association with relapse. While instances of perceived stigma measures frequency of these occurrences, distress measures the emotional reaction to each individual occurrence. In addition, the number of occurrences can have a cumulative effect from frequent exposure, whereas distress is a temporary response to that specific instance and would fade according to the coping skills of the individual and context of that occurrence (Anderson et al., 2006). Several studies have shown the negative impact of chronic stress on LGBTQ+ individuals (Green et al., 2022; Mays et al., 2018; Nicholas & Bresin, 2024), through decreased physical and mental wellness. Studies have also found that the cumulative effect of stressful life events increases the likelihood of relapse from substance use (McCabe et al., 2016; Pilowsky et al., 2013). In

addition, chronic stress is a known risk factor for relapse from substance use as it impacts the functionality of the HPA axis and associated neural circuits that are directly tied to motivation and relapse (Sinha, 2008). Taking the association between instances of perceived stigma and the development of chronic minority stress into consideration, a clear parallel is drawn between the association between number of instances of perceived stigma and risk of relapse.

Through the combination of structural stigma taking the form of limited access to mental health and medical care as well as social isolation and vigilance associated with perceived stigma in response to being a part of a stigmatized and minoritized community, several risk factors for relapse from substance use can arise in response to the accumulation of experiences of perceived stigma. Minoritized individuals may either be hesitant to seek care or have restricted access to care, thus adding to continued substance use and decreased likelihood of a successful recovery (Delabre et al., 2022; Hou et al., 2025; Mackiewicz et al., 2025). Social isolation and anticipatory vigilance are also known outcomes of perceived stigma (Jahn et al., 2020; Prizeman et al., 2023; Wong & Irfan, 2026). Social isolation is also a risk factor for relapse for those in recovery from substance use (Johnson et al., 2018).) These prior studies support that proximal stressors, such as perceived stigma, social isolation, and anticipatory vigilance, appear to have a stronger association with lower mental health status and increased risk of relapse, in comparison to distal stressors. Taking these risk factors into consideration, the association of perceived stigma with risk of relapse becomes clear.

Distal stressors outside of the minoritized individual's control have been proposed to be a greater risk factor for relapse than proximal stressors for minoritized individuals

(Pilowsky et al., 2013), as minoritized individuals would be able to manage or have control over their proximal stressors. However, data from this study indicated perceived stigma as a risk factor for relapse, whereas state-level anti-LGBTQ+ bill status was not. One aspect to be taken into consideration behind these results would be one's lived experience as a minoritized individual. LGBTQ+ individuals may experience emotional suppression in response to minority stress (Singh et al., 2023). Through the previous research on minority stress and emotion suppression, it is plausible that these participants coped with individual DHEQ occurrences and the occasional passing of anti-LGBTQ+ bills, potentially serving as a protective factor for relapse. In comparison, the impact of the accumulation of these individual DHEQ occurrences potentially led to the tipping point of relapse.

The existence of structural stigma that oppresses the rights of LGBTQ+ individuals in the United States is not new, marked by a significant and continued uptick of anti-LGBTQ+ legislation since the year of 2023 (Peele, 2023). In addition, the existence of anti-LGBTQ administrations on a federal level have been prominent ("LGBTQ History in Government Documents: Timeline of Documents", 2025). Several studies have demonstrated the negative impact structural stigma has on the sociopolitical environment and consequently affected stigmatized populations. Country-level structural stigma has been shown to predict both the victimization and maltreatment of sexual minorities and gender diverse individuals (Bränström et al., 2023). In addition, individual sexual minority youths who were in states with greater instances of structural stigma experienced a higher amount of interpersonal discrimination, leading to a negative impact on their mental health (Gordon et al., 2024). Not only does structural stigma lead to lack

of access to mental health and medical care, it incites a social response leading to increased instances of discrimination. As structural stigma can indirectly affect both discrimination and perceived stigma, and the LGBTQ+ community in the United States has frequently faced structural stigma from both federal and state levels in their own country since 2023, the lack of a statistically significant association between anti-LGBTQ+ state-level status and perceived stigma is easily understood. As such, the lack of impact that state-level anti-LGBTQ+ bill status had on perceived stigma indicated that risk of relapse may be more affected by immediate, lived experiences of intrapersonal stigma rather than structural.

Like the status of state-level anti-LGBTQ+ bills, awareness of these bills did not alter the relationship between DHEQ occurrences and relapse. Like the status of state-level anti-LGBTQ+ bills, it is plausible the participants psychologically distanced themselves or suppressed any emotions in response to being aware of said bills. In addition, most of the participants in this study were not directly impacted by these bills as, according to the ACLU, most of the bills passed were aimed at transgender and gender diverse individuals (ACLU, 2024; ACLU, 2025). Finally, as previously mentioned, many participants noted being aware of legislation being passed on a federal level as well as in other states. Through the combination of likely not being directly impacted by the bills and being aware of legislation being passed in other states and on a federal level, the impact of the legislation may have been interpreted as impacting the LGBTQ+ community in the United States as a whole, rather than as LGBTQ+ individuals, thus having less of a direct impact than perceived stigma.

Finally, lower PHQ-4 scores were found to be associated with higher MSPSS scores. Social support is known to reduce both anxiety and depression symptoms (Yang et al., 2025; Zhang et al., 2021). Through these previous studies, social support as a protective factor against anxiety and depression was already known, and the data from this study further reinforced that association.

Through the combination of prior research and these data collected from this study, an evident gap in research for LGBTQ+ individuals in recovery has been revealed. Based on the data from this study, perceived stigma associated with being an LGBTQ+ individual does have an association with risk of relapse. Taking this into consideration, relapse prevention could be tailored in a variety of ways to address perceived stigma for these individuals in clinical settings. For example, their correct pronouns could be used, heteronormative expectations or assumptions would cease to exist in those spaces, and LGBTQ+ identities could be normalized and reinforced as healthy, rather than being seen as unwell. Finally, through acknowledging the amount of stigma and discrimination this community has faced overall, specifically through healthcare and mental health support, the opportunity for corrective action arises.

Limitations

While the passing of anti-LGBTQ+ bills demonstrates the sociopolitical climate on a state level, smaller communities within each state have varying environments and stances for LGBTQ+ rights, thus indicating a potential limitation for this study. One's daily interactions within these microclimates can impact one's interpretation of political and social acceptance. For example, school and work environments can also influence one's perception of LGBTQ+ acceptance and safety. In addition, protections for

LGBTQ+ individuals also vary from city to city, independent of state borders. The main limitation of this aspect of the study is that the sociopolitical climate is assumed homogenous within each state despite the microclimates and microcultures that exist in each town and city.

One other limitation of the study is the timing of anti-LGBTQ+ bill passage. While the passing of a state-level anti-LGBTQ+ bill can be a source of distress for an LGBTQ+ individual, the bill may not immediately take effect, thus not immediately impacting the rights of the LGBTQ+ individual. The enactment of some of said passed bills also took place after the window of time taken into consideration for the participants' responses in the survey. As the structural stigma for this study was heavily dependent on timing, and some instances of this structural stigma occurred outside of the one-year window, the timing of the study serves as a limitation.

In addition, a significant majority of the anti-LGBTQ+ bills that were passed in the United States during the year prior to the study targeted the gender-diverse (GNC) subgroups of the LGBTQ+ community. Taking this into consideration, while the passing of anti-LGBTQ+ bills may affect one's perception of the LGBTQ+ community as being stigmatized, the bills directly targeted a subgroup according to their gender identity, which accounts only for a small percentage of the LGBTQ+ population.

The design of the study as cross-sectional also serves as a limitation for the study. The study asked the participants to confirm if they had experienced a relapse over the previous year and if they were aware of any anti-LGBTQ+ bills being passed in their state. If the study were designed to be longitudinal, the data gathered from the participants would have been more accurate as the participants would have been more

likely to remember something that had occurred recently rather than over the span of one year. Due to the length of time the participants were asked to consider for anti-LGBTQ+ bill passing and if any relapses occurred during that time, self-report bias is also a limitation for this study.

The sample size for this study also serves as a limitation. As the majority of the anti-LGBTQ+ bills that had passed during the prior year targeted gender diverse individuals, a higher number of said individuals should have been recruited. The number of participants in this study who identified as gender diverse was not sufficient to run any analyses that would reach the desired power level of 80%.

The study also failed to address the impact of intersectionality on perceived stigma. While the EDS does review any potential intersecting marginalized identities the participant may have, the DHEQ is entirely focused on the lived experience of the LGBTQ+ individual. In addition, state and federal level legislation impacting other marginalized identities has and continues to contribute to minority stress for those communities, thus it is plausible the participant experienced legislation oppressing rights associated with other aspects of their identity outside of being LGBTQ+.

Even with these limitations, the study has provided much-needed research for the population of LGBTQ+ individuals in recovery. While the impact of structural stigma on perceived stigma for the participants may not be statistically significant, an association between perceived stigma and risk of relapse for LGBTQ+ individuals in recovery was discovered. The data from this study demonstrate where minority stress operates most strongly for LGBTQ+ individuals in recovery and suggest that the chronic application of

minority stress through accumulated instances of external perceived stigma may lead to relapse.

Future Directions

The design of the study as cross-sectional and the gender identity of the participants were limitations. A longitudinal design of this study focusing on gender-diverse individuals would increase accuracy in capturing the experience of the populations most frequently impacted by state-level anti-LGBTQ+ bills as well as potentially track of any increase of minority stress in response to the accumulation of instances of perceived stigma. In addition, a qualitative follow-up to the survey inquiring about perceived impacts or experiences in response to the passing of state-level anti-LGBTQ+ bills would assist in creating a fuller picture of the lived experience of the participants and would create an opportunity to address the intersectionality of having multiple marginalized identities and how that may affect one's experience with perceived stigma.

Through the combination of the minority stress framework and substance-use research for minoritized individuals in recovery, this study revealed an association between the proximal stressor of perceived stigma and risk of relapse. The results indicated that chronic exposure to perceived stigma, through an increased number of occurrences, was more likely to function as a risk factor for relapse than distress in response to individual occurrences of perceived stigma. Taking this into consideration, moving forward, recovery groups, support groups, and other forms of care and support for LGBTQ+ individuals in recovery can apply this knowledge to their approach in supporting these individuals. By focusing on anti-stigma, affirming, and individualized

care, this framework may serve as a protective factor for the recovery of these individuals, thus decreasing the likelihood of relapse. This study demonstrates a greater need for longitudinal research for this population that would take the lived experiences, including subgroup, exact location, and intersecting identities of these individuals into consideration.

Appendix

Consent Form

Study Title: Perceived Stigma Associated with the Passing of Anti-LGBTQ+ Bills: The Impact of Structural Stigma on Minoritized Individuals in Recovery from Substance Use
Researcher: Scout Fraser
Faculty Advisor: **Alexandra Sedlovskaya**
Version Date: ***10/8/25***

What is the purpose of this research?

The purpose of this research is to assess perceived stigma and relapse rates for LGBTQ+ individuals in recovery in comparison to the passing of anti-LGBTQ+ legislation in their state. Perceived stigma is a known factor for relapse for individuals in recovery and perceived stigma in relation to anti-LGBTQ+ legislation should be assessed as a potential predictor for relapse.

What can I expect if I take part in this research?

You will be asked to answer seven demographic questions, three questions related to awareness of anti-LGBTQ+ legislation being passed in your state, and five questions related to any relapses in recovery over the last year. In addition, you will be asked to complete five questionnaires related to perceived stigma, discrimination, confidence in resisting use, mood, and perceived social support.

We expect that you will be in this research study for 30 minutes.

As the content of this study focuses on relapse from recovery, stigma, and discrimination, there is potential you may experience psychological distress when thinking of these topics.

If you choose to complete this study, resources and contact information for ACLU, The Trevor Project, and SAFE Project will be provided at the end of the survey.

What should I know about a research study?

- Whether or not you take part is up to you.
- Your participation is completely voluntary.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- Your refusal to participate will not result in any consequences or any loss of benefits that you are otherwise entitled to receive.
- You can ask all the questions you want before you decide.

Who can I talk to?

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the research team at **caf539@g.harvard.edu.**

HRP-502-c HUA Exempt Research Consent Script
Version 2.0 / 3-21-2022

Survey

How old are you?

Which state are you a resident of?

What is your sexual orientation?

☐ Lesbian
☐ Gay
☐ Bisexual
☐ Queer
☐ Other
☐ Prefer not to say

What is your gender identity (self describe)?

Which range best describes your annual household income before taxes?

☐ Less than $20,000.
☐ $20,000 to $39,999
☐ $40,000 to $59,999
☐ $60,000 to $79,999
☐ $80,000 to $99,999
☐ $100,000 or more
☐ prefer not to answer

How long have you lived in your state (years)?

What is your political affiliation?

☐ Democrat
☐ Republican
☐ Independent
☐ Other

How long have you been in recovery from addiction to substance use?

- ☐ I am not in recovery
- ☐ 0 to 1 years
- ☐ 1+ years

Are you aware of any anti-LGBTQ+ bills being proposed and/or passed in your state in the last year?

- ☐ Yes
- ☐ No

What bills are you aware of (self?

If a bill was passed, to what degree was your life negatively affected in the passing of the bill?

- ☐ Not at all affected
- ☐ Slightly affected
- ☐ Somewhat affected
- ☐ Moderately affected
- ☐ Quite affected
- ☐ Very affected
- ☐ Extremely affected

Have you experienced a relapse in the last year?

- ☐ Yes
- ☐ No

If yes, how many relapses have you had in the last year?

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5+
☐ n/a

What date(s) did the relapse(s) take place?

How long were you in recovery prior to the relapse?

☐ 0 to 1 years
☐ 1+ years
☐ n/a

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