The Mental Health Effects of State and Local Sexual Orientation Anti-Discrimination Laws: Evidence from BRFSS[*]

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Abstract

Recent literature in economics has documented improvements in labor market outcomes for individuals in same-sex partnerships following the passage of state- and local-level sexual orientation anti-discrimination laws, but little is known about the mental health effects of this legislation. Using data from the Behavioral Risk Factor Surveillance System (BRFSS) and a panel dataset of state- and local-level sexual orientation anti-discrimination laws, I exploit the variation in the passage of these laws to empirically evaluate their effect on the mental health of men and women in same-sex partnerships. Results indicate a direct improvement in mental health for women in same-sex partnerships and a decreased reliance on coping mechanisms for men in same-sex partnerships following the passage of sexual orientation anti-discrimination laws. These results suggest that anti-discrimination legislation is an important vehicle through which mental health outcomes are improved for individuals in same-sex partnerships in the United States.

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1   Introduction

Research has illustrated that youth who identify as LGBTQ+[1] experience higher rates of mental health challenges compared to their heterosexual peers,[2] and controversies surrounding both sexual orientation and mental health have been placed at the forefront of life in the contemporary United States. Stigmas have surrounded both sexual orientation and mental health in the U.S., specifically regarding sexual orientation as a choice and the refusal of many people to recognize mental illness as a "legitimate" health condition. While the percentage of Americans strongly opposed to same-sex marriage fell from 41 percent in 1996 to 23 percent in 2012 (Adamczyk and Liao, 2019) and research reveals that attitudes toward individuals who identify as LGBTQ+ have become more liberal over time, it is clear that these attitudes persist for certain demographic groups (see, for example, Holland et al. (2013)). Similar negative attitudes have been documented by researchers attempting to understand the perception of mental illness, and this research finds that there is widespread perception of individuals who experience mental illness as "dangerous."[3] In the 21st century, these topics have become highly politicized, and a legal environment in the United States which does not protect LGBTQ+ individuals in the labor market may contribute to feelings of estrangement, worsening mental health outcomes for these individuals.[4]

The focus of this paper is the effect of state- and local-level sexual orientation anti-discrimination laws on the mental health of men and women in same-sex partner-

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[1]Throughout this paper, I try to be inclusive in language, using LGBTQ+ (LGBTQIAP+ — lesbian, gay, bisexual, transgender, queer, intersex, asexual, pansexual, polyamorous, kink) for brevity, but due to lack of high-quality data on the entire community, most of my analysis is restricted to the LGB (lesbian, gay, bisexual) community. The precise acronyms are used throughout this paper when referring to specific subsets of the LGBTQ+ community.

[2]For more information, please see the public interest directorate "Lesbian, Gay, Bisexual, & Transgender Concerns," a statement by the American Psychological Association (2011).

[3]Please see Parcesepe and Cabassa (2013) for a meta-analysis of literature relating to public stigma of mental illness in the United States.

[4]Scholar of the Gay Rights Movement Faderman (2015) notes that legislation (or lack thereof) which differentially treats individuals who identify as LGBTQ+ "ma[kes] any homosexual, *ipso facto*, a presumptive criminal" (p. 537).

ships in the United States. I use data from the Behavioral Risk Factor Surveillance System (BRFSS) and, following the literature, infer sexual orientation from household composition. I also use a novel dataset of state- and local-level sexual orientation anti-discrimination laws reconstructed from Delhommer (2020). Results indicate a direct improvement in mental health for women in same-sex partnerships and a decreased reliance on coping mechanisms for men in same-sex partnerships following the passage of sexual orientation anti-discrimination laws, suggesting that anti-discrimination legislation is an important vehicle through which mental health outcomes are improved for individuals in same-sex partnerships in the United States.

The rest of the paper is organized as follows: Section 2 provides additional information on the recent history of LGBTQ+ issues in the United States, while Section 3 describes in further detail the contributions of the present study to related literature in economics, psychology, and sociology. In Section 4, I describe the relevant data sources and outline my empirical strategy in Section 5. Section 6 presents the results of these analyses. Finally, I offer concluding remarks and avenues for future research in Section 7. Tables are presented in Section 8 and figures are presented in Section 9.

2   Background

The landmark 2015 Supreme Court ruling in the case of *Obergefell* et al. *v. Hodges* guaranteed the legal right to marriage for all same-sex couples in the United States.[5] This decision came at a time where attitudes towards individuals who identify as LGBTQ+ were improving rapidly under President Obama, who himself had mixed opinions on same-sex marriage throughout his political career. As a presidential candidate, however, he supported the repeal of "Don't Ask, Don't Tell," which banned the service of openly gay troops in the U.S. Armed Forces, and became the

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[5]More information on this ruling may be found from *Oyez*, the free law project from Cornell University's Legal Information Institute, Justia, and the Chicago-Kent College of Law, "*Obergefell* et al. *v. Hodges*," available at this link (accessed December 5, 2020).

first president to publicly support same-sex marriage in an interview with Robin Roberts in 2012.[6] Under President Trump, however, government policy has exhibited a more negative attitude toward individuals who identify as LGBTQ+, from the ban of individuals who identify as transgender from serving in the military to removing non-discrimination protections in health care and a Vice President who has openly voiced dissent for individuals who identify as LGBTQ+ throughout his career.[7] These attitudes are not limited to those who hold elected office, however, and many individuals who identify as LGBTQ+ report having experienced more frequent negative attitudes because of their sexual orientation.[8]

Title VII of the Civil Rights Act of 1964 prohibits labor market discrimination on the basis of race, color, religion, and sex, but individuals were not explicitly protected from discrimination on the basis of sexual orientation and gender identity until June 2020. This lack of protection is despite a large body of robust empirical evidence which shows that individuals face labor market discrimination on the basis of sexual orientation and gender identity in the forms of lower wages, lower levels of employment, and lower rates of callbacks for job opportunities. In June of 2020, the United States Supreme Court ruled in the case of *Bostock v. Clayton County, Georgia* that Title VII forbids discrimination on the basis of sexual orientation and gender identity. Conservative Justice Neil Gorsuch wrote, "an employer who fired an individual for being homosexual or transgender fires that person for traits or actions it would not have questioned in members of a different sex ... [and] sex plays a necessary and undisguisable role in the decision, [which is] exactly what Title VII forbids."

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[6]A complete timeline of President Obama's public feelings regarding individuals who identify as LGBTQ+ may be found from Scott Horsley, "Not Always A 'Thunderbolt': The Evolution of LGBT Rights Under Obama," *NPR*, June 9, 2016, which may be found here (accessed December 5, 2020).

[7]See, for example, Tim Fitzsimons, "Trump Trend: LGBTQ Mentions Quietly Axed from Discrimination Guidelines," *NBC News*, December 31, 2019, which may be found here (accessed December 5, 2020) for more information about President Trump's attitudes towards individuals who identify as LGBTQ+ and Selena Simmons-Duffin, "Transgender Health Protections Reversed By Trump Administration," *NPR*, June 12, 2020, which can be found at this link (accessed December 5, 2020) regarding the removal of non-discrimination protections in health care and insurance for individuals who identify as transgender.

[8]Results from the Human Rights Campaign's survey, "Youth Report," may be found here (accessed December 5, 2020).

While this was rightfully hailed as "a victory for the LGBTQ community, for our democracy, and for our fundamental values of equality and justice for all" by House Speaker Nancy Pelosi,[9] individuals who identify as LGBTQ+ still face stigma both inside and outside of the labor market, and the Trump Administration does not believe that protections under the Civil Rights Act of 1964 should extend to individuals on the basis of sexual orientation or gender identity.[10] Anti-discrimination legislation at the federal level was delayed, and 23 states passed state-level sexual orientation anti-discrimination legislation in addition to counties in several other states prior to the 2020 Supreme Court ruling. In order to understand the impact of this federal policy, it is necessary to understand the effects of these state- and local-level laws, which is the subject of the present study.

3 Literature Review

More frequent negative attitudes toward individuals who identify as LGBTQ+ have important implications in various dimensions of an individual's life, including effects on an individual's mental health and labor market outcomes. Literature within economics documents effects of both sexual orientation and mental health on labor market outcomes separately, while literature within psychology identifies a systematic relationship between sexual orientation and mental health. Additional literature in economics provides insight into the effects of both legal access to same-sex marriage and sexual orientation anti-discrimination legislation. I begin with discussing theoretical literature in economics on labor market discrimination, turning to a discussion of its applications in the study of sexual orientation and mental health before concluding

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[9]Justice Neil Gorsuch and House Speaker Nancy Pelosi were quoted in Pete Williams, "In Landmark Case, Supreme Court Rules LGBTQ Workers are Protected From Job Discrimination," *NBC News*, June 15, 2020, which can be found here (accessed December 5, 2020).

[10]See, for example, Brooke Sopelsa, "Gay Workers Not Covered by Civil Rights Law, Trump Administration Tells Supreme Court," *NBC News*, August 23, 2019, available here (accessed December 5, 2020) which discusses the 2019 brief filed by the Trump Administration to the Supreme Court arguing that workers who identify as LGBTQ+ should not be protected by federal civil rights law such as Title VII of the Civil Rights Act of 1964.

with a summary of existing empirical literature which documents the effects of legal access to same-sex marriage and sexual orientation anti-discrimination legislation.

3.1 Labor Market Discrimination

Taste-based discrimination, proposed by Becker (1957), posits that employers, employees, or customers have non-pecuniary costs of interacting with (hiring, working with, or purchasing a good or service from) a certain demographic group, which increases the costs of employing individuals from this group. Therefore, firms with higher non-pecuniary costs of employing this group will not hire as many individuals from this group. This model of taste-based discrimination was first applied to discrimination on the basis of race, but has since been applied to discrimination on the basis of gender and sexual orientation. It is likely the case that individuals who experience taste-based discrimination have feelings of isolation, contributing to adverse mental health outcomes.

Statistical discrimination, pioneered by Arrow (1973) and Phelps (1972), arises not from individual preferences but rather imperfect information about individuals. Specifically, Phelps (1972) notes that an employer who wishes to maximize profits may discriminate against a certain demographic group if the employer believes, for example, that the group is less qualified or has weaker labor force attachment[11] if the cost of acquiring such information about the individual is high. This *a priori* belief about one demographic group being more profitable over another may stem from either previous experience with a demographic group or widespread sociological belief about the demographic group. This, then, leads to lower rates of employment for these demographic groups based on the average behavior of the group that is then applied to the individual worker. Additionally, it may be the case that employers believe they can more precisely discern information about a worker's marginal revenue product of labor in one demographic group, which leads to individuals in these demographic

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[11]These examples are widely sited in the existing literature on labor market discrimination and stem from the original application of Becker's model of taste-based discrimination to race and gender, respectively.

groups getting hired over individuals in other demographic groups. Empirical evidence discussed in Section 3.3 confirms that there are significant differences in mental health status between employed and unemployed individuals.[12]

Recent work by Akerlof and Kranton (2010) explores yet another possible avenue of discrimination. Specifically, they posit a model which identifies self-stereotyping as an avenue for "self discrimination," whereby individuals experience utility gains or losses from working in an occupation or industry that does not align with the norms of the social group which they belong to. As a result, fewer individuals will work in occupations which do not match their prescribed norms, leading to lower wages and lower levels of employment. While this is not a form of discrimination in the same sense as tasted-based discrimination or statistical discrimination, self-stereotyping may be an important avenue through which individuals make labor market decisions which may then differentially impact mental health.

Empirical evidence for the type of discrimination faced by individuals who identify as LGBTQ+ is beyond the scope of this paper, but it is important to understand the forms of discrimination propagated in the field of economics to better understand results of empirical literature regarding discrimination and its implications in considering policies, such as anti-discrimination laws, which attempt to address labor market discrimination.

3.2 Sexual Orientation and Labor Market Outcomes

A large body of empirical literature in economics, beginning with Badgett (1995),[13] has quantified earnings differentials among individuals who identify as LGB,[14]

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[12]This literature has recently been called into question, specifically in regard to its application to the study of racial discrimination. This literature assumes that race is an exogenous variable and, according to Spriggs (2020), "in the overwhelming case of economic analysis, [these models] assume that there is something 'deficient' about black people." Gamble (2020) provides an overview of the ways in which traditional economic assumptions and theories uphold racist systems.

[13]Badgett (1995) and many other of the early empirical studies regarding sexual orientation discrimination adapted the model of taste-based discrimination from Becker (1957) as the avenue through which individuals who identify as LGBTQ+ experience labor market discrimination.

[14]Survey data, even with the recent improvements of self-reported sexual orientation, is still limited, and even if available, the sample size for individuals who identify as transgender is often

finding a consistent wage penalty for gay or bisexual men and a wage premium for lesbian or bisexual women. These estimates have a wide range, but are qualitatively consistent — Badgett (1995) identified a penalty of $11-27$ percent for men and no conclusive results for women, Blandford (2003) identified a penalty of $30-32$ percent for men and a $17-23$ percent premium for women, and Sabia (2014) found a penalty of 13.1 percent for men and no conclusive results for women. In addition to experiencing discrimination in the form of reduced wages, there is also evidence that individuals who identify as LGB experience discrimination in the form of lower callback rates for job interviews (see, for example, Tilcsik (2011)) and that men who identify as gay are less likely to be employed and women who identify as lesbian are more likely to be employed, compared to otherwise similar heterosexual counterparts.

In recent years, however, literature in economics has identified a decrease and even reversal in discriminatory practices against individuals who identify as LGB. Recent audit studies (see, for example, Bailey et al. (2013) and Acquisti and Fong (2020)) have found no significant differences in callback rates for interviews for candidates who identify as LGB compared to otherwise similar heterosexual candidates. This literature cites improving attitudes toward individuals who identify as LGBTQ+ during the Obama Administration as the primary mechanism which produced these results that run contrary to the prior consensus in the literature.

In terms of discrimination in the form of lower wages, Carpenter and Eppink (2017) use data from the $2013-2015$ waves of the National Health Interview Survey to evaluate the sexual orientation wage and employment gaps. While the paper finds the same type of employment gaps as in the literature, it finds a large wage *premium* for both men (10 percent) and women (9 percent) who identify as LGB. Much like other literature, Carpenter and Eppink (2017) cite improved attitudes toward individuals who identify as LGBTQ+ as the primary mechanism which produces an earnings

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too small to obtain conclusive results. See, for example, Geijtenbeek and Plug (2018), who find that male-to-female transgender workers earn less as "registered women" and female-to-male transgender workers earn as much as "registered men" following their transitions using rich administrative data from the Netherlands.

premium for men who identify as gay or bisexual.

3.3 Mental Health

In addition to controversy surrounding sexual orientation in contemporary culture, mental health and mental health disparities are a prevalent issue in the United States today. According to the National Alliance on Mental Illness, approximately one in five adults experience mental illness each year. It has been documented, however, that not all demographic groups experience the same disparities in mental health and access to mental health care. For example, only 20.4 percent of non-Hispanic white adults in the United States are categorized as having a mental illness, compared to 26.8 percent of non-Hispanic mixed/multiracial adults and 37.4 percent of adults who identify as LGBTQ+.[15] A report by the U.S. Institute of Medicine Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities which reviews studies of the health of individuals who identify as LGBT in 2011 shows that while most individuals who identify as LGBT do not report mental health problems, there is clear evidence that individuals who identify as LGBT experience higher rates of mental and physical health issues than do individuals who do not identify as LGBT (Graham et al., 2011).[16] To this end, literature in the fields of psychology and sociology has attempted to understand the effects of "perceived discrimination" against minority groups on mental health. Everett et al. (2016), for example, examine discrimination in young adulthood on the basis of race, gender, and sexual orientation, and find that "minority statuses" are associated with increased odds of self-reported discrimination and increased stress and depressive

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[15]Complete statistics on mental health in the United States were obtained from the National Alliance on Mental Illness, "Mental Health by the Numbers," and may be found here (accessed December 5, 2020).

[16]This overview of findings was provided in Badgett (2020). The full text of the report, "The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding," may be found here (accessed December 5, 2020). "When Stigma Makes You Sick," chapter four of Badgett (2020), provides a comprehensive review of health disparities among individuals who identify as LGBT, but little consideration is given to the implications of the disparities in the labor market or in relation to legislation regarding marriage equality or employment non-discrimination.

episodes. This provides empirical evidence supporting the claim that different minority groups experience discrimination in different ways, and this discrimination may have "spillover" effects into the labor market.

Literature in economics has documented a relationship between mental health and labor market outcomes, finding that "worsened" mental health as measured by multiple surveys is correlated with decreases in the likelihood of work on both the intensive and extensive margins (see, for example, Banerjee et al. (2017) and Mitra and Jones (2017)). As Banerjee et al. (2017) note, the symptoms of an individual's mental illness may impact labor market outcomes in important ways, such as impairing the ability to obtain and maintain employment in addition to impacting earnings, productivity, energy level, and other similar non-cognitive attributes. There are, however, additional mechanisms beyond non-cognitive skills through which labor market outcomes may be impacted. These include the stigma of mental illness, as employers may be unable or unwilling to employ an individual who experiences mental illness, and job-lock, as individuals who experience mental illness may be tied to employer-sponsored health insurance plans to a more intense degree than other individuals who do not experience mental illness. Thus, mental illness may be another avenue through which individuals experience workplace discrimination.

The economics literature, however, has not specifically explored the relationship between mental health and sexual orientation. In the fields of psychology and sociology, however, there has been a documented relationship between mental health and sexual orientation. Using data from the 2013−2014 National Health Interview Survey, Cochran et al. (2017) find that adults who identify as LGB demonstrate a higher prevalence of mental health morbidity and functional limitations, with specific subsets of mental illness varying by gender. This literature shows that there are documented relationships between mental health and earnings and mental health and sexual orientation, suggesting that the effects of mental health and sexual orientation may interact in the labor market. It is thus important to understand the impacts of sexual orientation anti-discrimination legislation in the labor market, which indirectly

attempts to address these disparities.

There have been limited studies considering mental health and sexual orientation in the field of economics, and none that consider the mental health effects of sexual orientation anti-discrimination legislation. There is evidence that workers who identify as lesbian or gay are less likely to report job satisfaction, especially if they are open about their sexual orientation at work. There is also literature that explores the relationship between childhood experiences and human capital, finding that for individuals who identify LGB, school-age bullying reduces later investment in human capital (Drydakis, 2015, 2017, 2019; Bozani et al., 2019; Sidiropoulou et al., 2019). Additionally, using data from the Behavioral Risk Factor Surveillance System, Gonzales and Henning-Smith (2017) find that men and women who identify as gay or lesbian have higher odds of frequent mental distress compared to their heterosexual counterparts in addition to higher odds of poor physical health and chronic conditions.

3.4 Effects of Legal Access to Same-Sex Marriage

Using data from the California Health Interview Survey, Wight et al. (2013) examine the effects of the legalization of same-sex marriage and psychological well-being. Their results show that individuals in same-sex marriages were significantly less psychologically distressed than LGB individuals who were not in a legally-recognized partnership. Additionally, their results show that married heterosexuals exhibited the lowest levels of psychological distress, while LGB individuals who were not in legally-recognized relationships exhibited the highest levels of psychological distress. Anderson et al. (2019) find little evidence that the legalization of same-sex marriage in the United States reduced suicide attempts among teenagers who identify as LGB or the likelihood of suicide planning or depression. Finally, recent work by Carpenter et al. (2018) exploits variation in access to legal same-sex marriage by state prior to the *Obergefell* et al. *v. Hodges* ruling to study its relationship to health measures, finding that legal same-sex marriage is associated with significant increases in health

insurance, access to care, and utilization for men in same-sex partnerships, and this paper provides some evidence of improved mental health outcomes as a result of legal access to same-sex marriage.

Using data from the American Community Survey, Sansone (2019) finds that the individual and joint probabilities of being employed increase among same-sex couples following the legalization of same-sex marriage in the U.S., and that these changes in employment were driven by changes in attitudes and decreased discrimination. These results provide important information about the health and labor market effects of a policy which addressed LGBTQ+ issues, and it is thus necessary to understand the effects of other policies, such as sexual orientation anti-discrimination laws.

3.5   Effects of Anti-Discrimination Legislation

Klawitter and Flatt (1998), in some of the earliest work on sexual orientation anti-discrimination laws, use data from the 1990 U.S. Census and find no direct effect on labor market or health-related outcomes for individuals in same-sex partnerships. Burn (2018) studies the labor market effects of state employment non-discrimination acts using data from the American Community Survey. His results show that enactment of an Employment Non-Discrimination Act (ENDA) is associated with increased wages for gay men and lower rates of employment for lesbian women, depending on the strength of the law in terms of punitive and compensatory damage provisions. Using data from the U.S. Census and General Social Survey, Martell (2013) estimates the relationship between earnings and ENDAs for gay men. His results show that, despite shortcomings, state-level ENDAs reduce wage differentials by 20 percent for behaviorally gay men. Both Burn (2018) and Martell (2013), however, fail to account for both local-level anti-discrimination legislation and health-related outcomes.

The most related paper to the present study is Delhommer (2020), which examines the effect of state- and local-level sexual orientation anti-discrimination legislation on labor market differentials of LGB workers using data from the American Community Survey. He finds that anti-discrimination laws significantly reduce gaps

in labor force participation rates, employment, and the wage gap for gay men relative to straight men and significantly reduce gaps in labor force participation rates, employment, and the wage premium for lesbian women relative to straight women. Delhommer (2020) also shows that passage of state-level legislation increases favorability toward LGB people through increased support for same-sex marriage, suggesting that policy changes may change public opinion, not *vice versa*. Further, he shows that estimation of the effect of solely state-level laws produces results which misrepresent the effects on labor market outcomes for LGB workers.

4 Data

The main data for this analysis are drawn from the $2005-2016$ waves of the Behavioral Risk Factor Surveillance System (BRFSS) administered by the Centers for Disease Control and Prevention. The BRFSS surveys, which are administered via telephone, are designed to be state representative and focus on health outcomes, access to health care, and health-related behaviors. As noted by Carpenter et al. (2018), the annual sample size of the BRFSS has surpassed 400,000 observations in recent years, with interviews conducted throughout the entire calendar year.[17] Following Delhommer (2020), I restrict my analysis to individuals aged $25-65$ to focus on individuals who have entered the job market and are not yet retired, as the focus of this paper is labor market discrimination.

While data on self-identified sexual orientation are the "gold standard" for research on LGBTQ+ issues, they remain largely unavailable in U.S. datasets for the period of interest. Following the literature (Klawitter and Flatt, 1998; Gates, 2009; Jepsen and Jepsen, 2017; Carpenter et al., 2018; Delhommer, 2020), I infer sexual orientation by examining the sex composition of the adults in the household. In the BRFSS, a randomly selected adult in the household is asked to state the number of

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[17]As further noted by Carpenter et al. (2018), the BRFSS began conducting interviews via cell phone in 2011. The household screening questions, which I use to infer sexual orientation by household composition, are not asked in the cell phone survey and are not included in my analysis.

adult men and women in the household. Following Carpenter et al. (2018), I identify a man as a member of a same-sex partnership if there are exactly two adult men and zero adult women in the household and a woman as a member of a same-sex partnership if there are exactly two adult women and zero adult men in the household.[18] As Delhommer (2020) notes, this comparison based on household composition is not equivalent to comparing LGB and heterosexual individuals, which is an important consideration to keep in mind when interpreting results. Throughout this paper, I attempt to make this clear by referring to these individuals as "men and women in same-sex partnerships."

Further, as Delhommer (2020) notes, "enactment of anti-discrimination legislation is not random" (p. 6), and states and municipalities which have these protections are often thought of as "friendlier," or more tolerant to LGB individuals and workers. A potential concern, then, is the endogenous adoption of laws. Delhommer (2020) shows that while "the distribution of same-sex partnerships by state and county are skewed to more progressive states and counties with large cities" (p. 7), there is no significant effect of anti-discrimination legislation on the number of same-sex partnerships in a given county. This suggests that there is minimal sorting of LGB workers into more "tolerant" areas following the passage of anti-discrimination legislation (p. 17).

The main dependent variable in my analysis is drawn from the question which ask the respondents, "Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" Responses range from zero to 30 days and are incorporated into my analysis in several ways, as described further in Section 5.

A complete dataset of state- and local-level sexual orientation anti-discrimination laws was reconstructed using information obtained from Table 1 of Delhommer (2020). These laws were collected by Delhommer (2020) from the Movement Advancement

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[18]This follows directly from Carpenter et al. (2018), whose "simple reasoning [is] that gay and lesbian couples are much more likely to have a household composed of exactly two same-sex adults than are heterosexual couples" (p. 13).

Project (MAP), an LGBTQ+ advocacy group. As Delhommer (2020) notes, this website provides complete information on state-level legislation and incomplete information regarding local, city- and county-level legislation, which were supplemented with old media reports, correspondence with officials, and FOIA requests. This dataset is the first complete local-level dataset on sexual orientation anti-discrimination legislation in the United States. Figures 1 and 2, which originally appear as Figures 1 and 2 of Delhommer (2020), visually display the states and counties which enacted these anti-discrimination protections by 2005 and 2016, respectively.

Delhommer (2020) further notes the importance of local-level anti-discrimination legislation on labor market differentials. Since the BRFSS public-use data are only available at the state level, the treatment variable ("Law" in Equation 1) in my analysis is the percentage of the population in the state living in the treated cities or counties in a given year. State and local population estimates for each year were obtained from the United States Census Bureau, and the treatment variable was manually constructed using this information to obtain the percentage of each state's population in each year that was protected by sexual orientation anti-discrimination legislation. Data on state characteristics by year were obtained from the University of Kentucky Center for Poverty Research.[19] I present descriptive statistics by type of partnership in Table 1 for men and in Table 2 for women. As is evident from Tables 1 and 2, there are clear differences in mental health outcomes and demographic characteristics between men and women in same-sex partnerships versus men and women in different-sex partnerships.

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[19]Data on the historical federal minimum wage were obtained from the Federal Reserve Bank of St. Louis ("Federal Minimum Hourly Wage for Nonfarm Workers for the United States," accessed December 5, 2020) to adjust the UKCPR data to reflect the prevailing minimum wage in each state in each year.

5 Empirical Analysis

In order to empirically estimate the effects of state- and local-level sexual orientation anti-discrimination laws, I employ a difference-in-differences framework and exploit the variation in the passage of these laws over time. Specifically, I estimate the following equation:

$$Y_{ist} = \beta_0 + \beta_1 \text{Law}_{st} + \beta_2 \text{SSP}_i + \beta_3 \text{Law}_{st} \times \text{SSP}_i + \beta_4 X_i + \beta_5 Z_{st} + \mu_s + \delta_t + \varepsilon_{ist} \quad (1)$$

where Y_{ist} is a mental health outcome for person i in state s in year t, Law_{st} is the percentage of the population in state s in year t which is protected by sexual orientation anti-discrimination legislation, SSP_i is an indicator equal to one if the respondent is in a same-sex partnership, X_i is a vector of demographic characteristics,[20] Z_{st} is a vector of state characteristics,[21] μ_s is a state fixed effect, δ_t is a year fixed effect, and ε_{ist} is the error term clustered at the state level. Equation 1 is estimated separately for men and women aged $25-65$ using survey weights available in the BRFSS data[22] and the coefficient of interest is β_3, which measures the effect of being in a same-sex partnership in an area which passed sexual orientation anti-discrimination protections. My identifying assumption in this estimation strategy is that the trends in mental health in the states which passed anti-discrimination laws would have continued parallel with the states that did not pass these laws in the absence of the laws for men and women in same- and different-sex partnerships.

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[20]X_i includes age in years and race dummies ("basic demographic controls"), number of children, employment status dummies, categorical income dummies, marital status dummies, and education dummies ("additional demographic controls"), health coverage and an indicator for the inability to see a doctor due to cost ("health-related controls"), and smoking and drinking behaviors ("risky behaviors controls").

[21]Z_{st} includes the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage.

[22]In the results reported in Section 6, I only consider basic demographic controls and state characteristics, due to the fact that the additional demographic controls, health-related controls, and risky behaviors controls may be mechanisms which differentially impact the mental health of men and women in same-sex partnerships.

The main mental health outcome I consider in my analyses is the number of mental health days the respondent reports as "not good." As described in Section 4, this question encourages respondents to include days on which they experienced stress, depression, and problems with emotions. In other specifications, I also consider four different bins — 0 days, 1−10 days, 11−20 days, and 21−30 days on which a respondent's mental health was not good. Further, I estimate the effect of sexual orientation anti-discrimination legislation by different age groups — 25−39, 40−54, and 55−65 years old. Additional dependent variables are considered, including whether or not the respondent is employed, whether or not the respondent reports having health care coverage, whether or not the respondent is a binge drinker (if they consumed 5 or more alcoholic beverages on a single occasion in the last 30 days), and whether or not the respondent reports smoking some days or every day.

6   Results

6.1   Effect of Anti-Discrimination Laws on Mental Health

Results of the estimation of Equation 1 with the number of mental health days a respondent reported as "not good" as the dependent variable are reported in Table 3. As is shown, there is a significant relationship between being in a same-sex partnership and adverse mental health outcomes as measured by experiencing more than one additional day of stress, depression, or problems with emotions in the last 30 days, consistent with the findings of the literature discussed in Section 3.3. These findings hold at the 1 percent significance level and are robust to the inclusion of basic demographic controls and state characteristics for both men and women. Additionally, as shown in Panel B, there is a significant reduction in poor mental health days for women of approximately 0.30 days in the last 30 days. These findings hold at the 5 percent significance level and are robust to the inclusion of both basic demographic controls and state characteristics.

Tables 4, 5, and 6 report the results of the estimation of Equation 1 with the number of mental health days a respondent reported as "not good" as the dependent variable for individuals aged 25−39, 40−54, and 55−65, respectively. The significant relationship between being in a same-sex partnership and experiencing more adverse mental health days holds for both men and women in each age group. This effect is largest for women aged 40−54, with the magnitude of the coefficient on being in a female same-sex partnership nearing two more adverse mental health days reported in the last 30 days, which are robust to the inclusion of basic demographic controls and state characteristics. This group, women aged 40−54, also experiences a significant reduction in adverse mental health days of over half a day in the last 30 days following the passage of employment anti-discrimination laws. Again, these findings hold at the 1 percent significance level and are robust to the inclusion of basic demographic controls and state characteristics. Additionally, there is an improvement in mental health for men in same-sex partnerships aged 55−65, significant at the 10 percent level robust to the inclusion of state characteristics.

It is important to note the lack of significant results for men who are in same-sex partnerships. While it is impossible to know exactly why this is the case, it may be because of stigmas which surround mental illness discussed in Section 3 which differentially impact men and women. Bharadwaj et al. (2017) show that men are significantly more likely to under-report mental illness, which may explain the lack of significant results. This under-reporting is likely due to the stigma which surrounds mental illness and has important implications not only for the reporting of adverse mental health outcomes, but also for the utilization of mental health care.

Figures 3 and 4 plot the coefficients on the interaction term, Law × SSP, from the estimation of Equation 1 for men and women, respectively, with a binary variable equal to one if the respondent's reported number of mental health days that were "not good" falls in the bin range as indicated on the horizontal axis as the dependent variable with neither basic demographic controls nor state characteristics. As shown, individuals experience different levels of poor mental health, as measured by

the number of days a respondent reported that their mental health was "not good." Figures 3 and 4 illustrate reductions in the probabilities that men and women in same-sex partnerships experience 1−10 and 11−20 days of adverse mental health. Additionally, there is a significant reduction in the probability that women in same-sex partnerships experience 21−30 days of adverse mental health, suggesting that this legislation improves outcomes most for individuals experiencing more severe mental health outcomes.

6.2 Effect of Anti-Discrimination Laws on Employment and Health Coverage

In addition to considering mental health outcomes, I consider several other important outcomes which are plausibly affected by the passage of sexual orientation anti-discrimination laws. In Table 7, I report the results of the estimation of Equation 1 with a binary variable equal to one if the respondent reports being employed for wages or self-employed as the dependent variable. As is shown, there is a significant negative relationship between being in a same-sex partnership and being employed for men, with results indicating a 9 percent decrease in the probability of being employed for men in same-sex partnerships, and these findings hold at the 1 percent significance level and are robust to the inclusion of basic demographic controls and state characteristics. The inclusion of basic demographic controls yields a significant (at the 5 percent level) and positive relationship between employment and being in a same-sex partnership for women, suggesting that when controlling for age and race, women in same-sex partnerships are 4 percent more likely to be employed than women not in same-sex partnerships. These results, both magnitude and direction, are consistent with the literature discussed in Section 3.2. In contrast to Delhommer (2020), I find no significant effect of the passage of anti-discrimination laws on the probability of being employed. This is likely due to the construction of the employment variables in the BRFSS, which are not as precise as those in the ACS used by Delhommer

([2020](#)) and the lack of comprehensive, employment-related controls such as income, occupation, and industry.

In Table [8](#), I consider the effects of sexual orientation anti-discrimination legislation on health care coverage. As is evident, there is a significant (at the 1 percent significance level) and negative relationship between being in a same-sex partnership and the probability of having health insurance for both men and women. Following the passage of sexual orientation anti-discrimination laws, however, there is a significant increase in the probability that men and women in same-sex partnerships will have health insurance coverage. While I find no significant results on employment, [Delhommer](#) ([2020](#)) finds a positive, significant effect on hours worked for men in same-sex partnerships, suggesting that a shift to full-time employment may be occurring for men in same-sex partnerships, which would increase the probability that they have health insurance, consistent with these results. Additionally, the passage of the Affordable Care Act in 2010 is included in the time period of interest, which may further contribute to the change in health care coverage.

6.3 Effect of Anti-Discrimination Laws on Risky Behaviors

Finally, I consider two risky behavior outcomes related to drinking and smoking behaviors. Table [9](#) reports the results of the estimation of Equation [1](#) with a binary variable equal to one if the respondent is a binge drinker, defined as consuming five or more alcoholic beverages on a single occasion in the last 30 days, as the dependent variable. These results indicate a significant (at the 1 percent significance level), positive relationship between binge drinking and being in a same-sex partnership for both men and women, and are robust to the inclusion of both basic demographic controls and state characteristics. Turning to smoking behaviors, Table [10](#) reports the results of the estimation of Equation [1](#) with a binary variable equal to one if the respondent reports smoking some days or every day as the dependent variable. Similar to binge drinking, there is a significant, positive relationship between smoking and being in a same-sex partnership for both men and women. This increased substance

use (both drinking and smoking) among men and women in same-sex partnerships is consistent with the literature. Also important to note is the significant reduction in the probability of smoking most days or every day (by approximately 2.5 percent) for men in same-sex partnerships as a result of the passage of sexual orientation anti-discrimination legislation. Risky behaviors and substance abuse may be a coping mechanism for individuals in same-sex partnerships, which is consistent with the literature,[23] and may be read as an indirect improvement of mental health outcomes for men in same-sex partnerships following the passage of sexual orientation anti-discrimination legislation.

These results indicate a significant improvement in mental health for women in same-sex partnerships following the passage of state- and local-level sexual orientation anti-discrimination laws. While there is no direct, significant effect on mental health for men in same-sex partnerships, analysis of risky behaviors indicates a significant reduction in the probability that men in same-sex partnerships will be a regular smoker following the passage of this legislation. Thus, it may be the case that these risky behaviors, which may be viewed as coping mechanisms to cope with adverse mental health outcomes, serve as a proxy for mental health status due to men's under-reporting of mental illness. Read this way, these results indicate a significant improvement in mental health for both men and women in same-sex partnerships following the passage of sexual orientation anti-discrimination legislation.

7   Conclusion

This paper provides the first analysis of the effects of state- and local-level sexual orientation anti-discrimination legislation on the mental health of men and women in same-sex partnerships. Using a panel dataset of laws reconstructed from Delhommer (2020) and data from the Behavioral Risk Factor Surveillance System (BRFSS), I show that there is a direct, significant improvement in mental health for women in

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[23]See, for example, Burgard et al. (2005), Gruskin and Gordon (2006), and Greenwood and Gruskin (2007).

same-sex partnerships and a decreased reliance on coping mechanisms for men in same-sex partnerships. Specifically, I find a decrease in the number of days in the last 30 days in which women in same-sex partnerships reported that their mental health was "not good" of approximately 0.30 days following the passage of sexual orientation anti-discrimination legislation. Further, I find a decrease in the probability that men in same-sex partnerships are regular smokers of approximately 2.5 percent following the passage of sexual orientation anti-discrimination legislation. When interpreted as a coping mechanism for individuals experiencing adverse mental health outcomes, this indicates an improvement in mental health for men in same-sex partnerships following the passage of this legislation.

The present analysis has several limitations I hope to address in future work. These results provide a lower bound of the estimation for two reasons related to my inability to precisely identify treated individuals. First, I am unable to accurately identify same-sex couples. I identify cohabitants, but two younger individuals cohabiting might be more likely to be roommates rather than a couple. This is consistent with the fact that I find more significant results for older individuals, as they are more likely to be correctly identified as a same-sex couple rather than roommates. Second, I am unable to precisely identify individuals protected by this legislation and use the population share of a state that is treated in this analysis. In future work, I hope to use the county-level, restricted BRFSS data to more precisely identify treated individuals. I hope to address these issues in future research to correctly identify the effect of sexual orientation anti-discrimination legislation on the mental health of LGB individuals. Finally, I am unable to correctly identify the mechanism which improves the mental health of individuals in same-sex partnerships. In future research, I hope to obtain comprehensive data on labor market outcomes to ascertain if it is improvements in employment and health insurance which improve mental health or if stigmas surrounding sexual orientation fall as a result of the passage of these laws, improving mental health for men and women in same-sex partnerships.

Prior to the Supreme Court ruling in the case of *Bostock v. Clayton County,*

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Georgia, there were no federal-level anti-discrimination protections for individuals on the basis of sexual orientation and gender identity. These results, when read in conjunction with those of Delhommer (2020), illuminate the importance of this legislation for individuals who experience labor market discrimination on the basis of sexual orientation or gender identity. It is necessary to continue the fight for equal rights for all, due to the positive effects of these anti-discrimination protections on labor market and health-related outcomes.

8 Tables

Table 1

Descriptive Statistics by Type of Partnership: Men.

	SSP	(std. dev.)	DSP	(std. dev.)	Difference	(std. error)
Age	44.03	(11.16)	44.48	(11.14)	-0.450***	(0.139)
Number of Children	0.268	(0.731)	1.14	(1.30)	-0.874***	(0.010)
White	0.651	(0.477)	0.730	(0.444)	-0.080***	(0.006)
Black	0.123	(0.328)	0.078	(0.269)	0.044***	(0.004)
Asian	0.028	(0.166)	0.034	(0.181)	-0.005**	(0.002)
Pacific Islander	0.005	(0.070)	0.007	(0.081)	-0.002**	(0.0009)
Multiracial	0.141	(0.348)	0.111	(0.314)	0.030***	(0.005)
Mental Health Days "Not Good"	4.31	(8.58)	2.57	(6.65)	1.75***	(0.101)
Health Care Coverage	0.758	(0.428)	0.873	(0.333)	-0.114***	(0.005)
Could Not See Doctor (Cost)	0.184	(0.387)	0.106	(0.308)	0.077***	(0.005)
Regular Smoker	0.314	(0.464)	0.188	(0.391)	0.126***	(0.006)
Binge Drinker	0.117	(0.322)	0.086	(0.281)	0.031***	(0.005)
Married	0.144	(0.351)	0.864	(0.342)	-0.720***	(0.004)
Less than High School Diploma	0.106	(0.308)	0.084	(0.278)	0.022***	(0.004)
High School Graduate	0.274	(0.446)	0.253	(0.435)	0.020***	(0.005)
Some College, No Degree	0.257	(0.437)	0.247	(0.431)	0.010*	(0.005)
College Degree	0.363	(0.481)	0.416	(0.493)	-0.052***	(0.006)
Employed	0.694	(0.461)	0.811	(0.391)	-0.117***	(0.005)
Unemployed	0.113	(0.317)	0.057	(0.231)	0.056***	(0.004)
Observations	24,666		543,000		567,666	

Descriptive statistics reported for men aged $25-65$ in same-sex ("SSP") or different-sex ("DSP") partnerships inferred by household composition using data from the $2005-2016$ waves of the BRFSS and are weighted using BRFSS survey weights. All education variables refer to the highest level completed. Standard deviations are reported in parentheses in Columns (1) and (2), while heteroskedasticity-robust standard errors are reported in parentheses in Column (3).

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 2

Descriptive Statistics by Type of Partnership: Women.

	SSP	(std. dev.)	DSP	(std. dev.)	Difference	(std. error)
Age	46.15	(11.29)	44.24	(11.34)	1.92***	(0.088)
Number of Children	0.712	(1.12)	1.15	(1.28)	-0.437***	(0.009)
White	0.561	(0.496)	0.754	(0.431)	-0.194***	(0.004)
Black	0.234	(0.423)	0.069	(0.253)	0.166***	(0.003)
Asian	0.021	(0.143)	0.030	(0.170)	-0.009***	(0.002)
Pacific Islander	0.006	(0.075)	0.007	(0.084)	-0.001**	(0.0007)
Multiracial	0.136	(0.342)	0.111	(0.313)	0.026***	(0.003)
Mental Health Days "Not Good"	5.66	(9.51)	3.60	(7.52)	2.06***	(0.068)
Health Care Coverage	0.794	(0.404)	0.882	(0.323)	-0.088***	(0.003)
Could Not See Doctor (Cost)	0.243	(0.429)	0.141	(0.348)	0.102***	(0.003)
Regular Smoker	0.249	(0.433)	0.156	(0.362)	0.094***	(0.003)
Binge Drinker	0.033	(0.180)	0.025	(0.157)	0.008***	(0.002)
Married	0.075	(0.263)	0.869	(0.337)	-0.795***	(0.002)
Less than High School Diploma	0.110	(0.313)	0.074	(0.262)	0.036***	(0.003)
High School Graduate	0.257	(0.437)	0.238	(0.426)	0.019***	(0.003)
Some College, No Degree	0.305	(0.460)	0.280	(0.449)	0.025***	(0.003)
College Degree	0.328	(0.470)	0.408	(0.491)	-0.080***	(0.003)
Employed	0.643	(0.479)	0.624	(0.484)	0.019***	(0.004)
Unemployed	0.105	(0.306)	0.050	(0.218)	0.054***	(0.002)
Observations	62,409		780,632		843,041	

Descriptive statistics reported for women aged $25-65$ in same-sex ("SSP") or different-sex ("DSP") partnerships inferred by household composition using data from the $2005-2016$ waves of the BRFSS and are weighted using BRFSS survey weights. All education variables refer to the highest level completed. Standard deviations are reported in parentheses in Columns (1) and (2), while heteroskedasticity-robust standard errors are reported in parentheses in Column (3).

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 3

Effect of Anti-Discrimination Laws: Number of Mental Health Days Not Good.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	-0.147	-0.169	-0.209**	-0.230**	-0.034	-0.052	-0.061	-0.071
	(0.104)	(0.104)	(0.095)	(0.096)	(0.088)	(0.090)	(0.097)	(0.099)
SSP	1.25***	1.19***	1.25***	1.20***	1.60***	1.53***	1.60***	1.53***
	(0.108)	(0.107)	(0.107)	(0.106)	(0.086)	(0.087)	(0.086)	(0.087)
Law × SSP	0.109	0.110	0.100	0.101	-0.290**	-0.288**	-0.297**	-0.294**
	(0.340)	(0.338)	(0.333)	(0.331)	(0.112)	(0.116)	(0.111)	(0.116)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	3.02	3.02	3.02	3.02	4.34	4.34	4.34	4.34
R^2	0.0038	0.0076	0.0039	0.0078	0.0045	0.0076	0.0045	0.0076
Observations	993,432				1,542,705			

Results of the estimation of Equation 1 by OLS with the number of mental health days a respondent reported as "not good" in the last 30 days as the dependent variable using data from the $2005-2016$ waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.
* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 4

Effect of Anti-Discrimination Laws: Number of Mental Health Days Not Good, Ages 25−39.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	-0.114	-0.134	-0.235	-0.258	0.120	0.102	0.058	0.047
	(0.180)	(0.181)	(0.164)	(0.162)	(0.180)	(0.181)	(0.186)	(0.190)
SSP	1.04***	0.983***	1.06***	0.996***	1.49***	1.40***	1.49***	1.40***
	(0.241)	(0.246)	(0.241)	(0.256)	(0.244)	(0.237)	(0.244)	(0.237)
Law × SSP	0.060	0.051	0.032	0.022	0.127	0.123	0.119	0.116
	(0.600)	(0.590)	(0.586)	(0.575)	(0.289)	(0.290)	(0.287)	(0.288)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	3.06	3.06	3.06	3.06	4.32	4.32	4.32	4.32
R^2	0.0039	0.0082	0.0041	0.0084	0.0052	0.0094	0.0053	0.0094
Observations	220,740				362,801			

Results of the estimation of Equation 1 by OLS with the number of mental health days a respondent reported as "not good" in the last 30 days as the dependent variable for respondents aged 25−39 using data from the 2005−2016 waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 5

Effect of Anti-Discrimination Laws: Number of Mental Health Days Not Good, Ages 40−54.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	-0.254*	-0.264*	-0.325**	-0.337**	-0.076	-0.110	-0.129	-0.157
	(0.142)	(0.147)	(0.139)	(0.144)	(0.122)	(0.122)	(0.117)	(0.115)
SSP	1.24***	1.21***	1.25***	1.21***	1.84***	1.75***	1.84***	1.76***
	(0.133)	(0.131)	(0.131)	(0.129)	(0.154)	(0.160)	(0.155)	(0.161)
Law × SSP	0.418	0.379	0.409	0.369	-0.536***	-0.539***	-0.545***	-0.548***
	(0.329)	(0.319)	(0.321)	(0.311)	(0.179)	(0.185)	(0.179)	(0.185)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	3.14	3.14	3.14	3.14	4.63	4.63	4.63	4.63
R^2	0.0046	0.0087	0.0049	0.0091	0.0054	0.0089	0.0055	0.0089
Observations	402,451				617,154			

Results of the estimation of Equation 1 by OLS with the number of mental health days a respondent reported as "not good" in the last 30 days as the dependent variable for respondents aged 40−54 using data from the 2005−2016 waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 6

Effect of Anti-Discrimination Laws: Number of Mental Health Days Not Good, Ages 55−65.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	0.030	-0.028	0.052	-0.004	-0.141	-0.149	-0.131	-0.120
	(0.119)	(0.113)	(0.127)	(0.121)	(0.167)	(0.165)	(0.184)	(0.177)
SSP	1.59***	1.49***	1.59***	1.49***	1.29***	1.19***	1.30***	1.19***
	(0.165)	(0.170)	(0.164)	(0.170)	(0.122)	(0.120)	(0.122)	(0.119)
Law × SSP	-0.465*	-0.413	-0.466*	-0.413	-0.287*	-0.293*	-0.293*	-0.298*
	(0.268)	(0.284)	(0.268)	(0.284)	(0.166)	(0.159)	(0.166)	(0.159)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	2.86	2.86	2.86	2.86	4.04	4.04	4.04	4.04
R^2	0.0048	0.0104	0.0048	0.0104	0.0046	0.0116	0.0047	0.0117
Observations	370,241				562,750			

Results of the estimation of Equation 1 by OLS with the number of mental health days a respondent reported as "not good" in the last 30 days as the dependent variable for respondents aged 55−65 using data from the 2005−2016 waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 7
Effect of Anti-Discrimination Laws: Employment.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	-0.001	0.002	-0.007	-0.004	0.004	0.008	0.005	0.007
	(0.010)	(0.010)	(0.008)	(0.008)	(0.006)	(0.006)	(0.006)	(0.005)
SSP	-0.085***	-0.091***	-0.085***	-0.091***	0.011	0.018**	0.011	0.018**
	(0.007)	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)
Law × SSP	0.0005	0.004	0.0004	0.003	0.014	0.015	0.014	0.015
	(0.011)	(0.010)	(0.011)	(0.011)	(0.013)	(0.012)	(0.013)	(0.012)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	0.743	0.743	0.743	0.743	0.631	0.631	0.631	0.631
R^2	0.0153	0.0728	0.0155	0.0730	0.0134	0.0308	0.0135	0.0309
Observations	1,001,752				1,557,181			

Results of the estimation of Equation 1 by OLS with a binary variable equal to one if the respondent reports being employed for wages or self-employed as the dependent variable using data from the $2005-2016$ waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.

* p<0.10, ** p<0.05, *** p<0.01.

Table 8
Effect of Anti-Discrimination Laws: Health Care Coverage.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	-0.003	0.0005	-0.002	0.0004	-0.010	-0.008	-0.007	-0.007
	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
SSP	-0.097***	-0.084***	-0.097***	-0.084***	-0.079***	-0.071***	-0.079***	-0.072***
	(0.013)	(0.011)	(0.013)	(0.011)	(0.004)	(0.004)	(0.004)	(0.004)
Law × SSP	0.047***	0.029**	0.047***	0.029**	0.041***	0.036***	0.041***	0.036***
	(0.015)	(0.012)	(0.015)	(0.012)	(0.008)	(0.008)	(0.008)	(0.008)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	0.862	0.862	0.862	0.862	0.870	0.870	0.870	0.870
R^2	0.0163	0.0809	0.0164	0.0809	0.0260	0.0787	0.0261	0.0788
Observations	1,004,268				1,561,248			

Results of the estimation of Equation 1 by OLS with a binary variable equal to one if the respondent reports being having health care coverage as the dependent variable using data from the 2005−2016 waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 9

Effect of Anti-Discrimination Laws: Binge Drinking.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	0.008*	0.009**	0.007	0.008	0.007**	0.008**	0.007**	0.007**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)
SSP	0.026***	0.026***	0.026***	0.026***	0.008***	0.010***	0.008***	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Law × SSP	0.004	-0.001	0.004	-0.001	-0.0001	-0.001	-0.0001	-0.001
	(0.007)	(0.006)	(0.007)	(0.006)	(0.004)	(0.003)	(0.004)	(0.003)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	0.090	0.090	0.090	0.090	0.025	0.025	0.025	0.025
R^2	0.0053	0.0152	0.0053	0.0153	0.0040	0.0094	0.0040	0.0094
Observations	569,666				922,303			

Results of the estimation of Equation 1 by OLS with a binary variable equal to one if the respondent reports at least one occasion during the last 30 days in which they consumed 5 or more alcoholic beverages ("binge drinking") as the dependent variable using data from the 2005−2016 waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 10
Effect of Anti-Discrimination Laws: Smoking.

	Panel A: Men				Panel B: Women			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Law	0.008	0.007	0.003	0.003	0.003	0.003	0.002	0.003
	(0.009)	(0.008)	(0.009)	(0.009)	(0.004)	(0.004)	(0.003)	(0.004)
SSP	0.112***	0.106***	0.112***	0.106***	0.077***	0.080***	0.077***	0.080***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.006)	(0.005)	(0.006)	(0.005)
Law × SSP	-0.025**	-0.024*	-0.026**	-0.025**	-0.010	-0.011*	-0.010	-0.011*
	(0.012)	(0.012)	(0.012)	(0.012)	(0.007)	(0.007)	(0.007)	(0.007)
Basic Demographic Controls?	NO	YES	NO	YES	NO	YES	NO	YES
State Characteristics?	NO	NO	YES	YES	NO	NO	YES	YES
Mean Dependent Variable	0.211	0.211	0.211	0.211	0.191	0.191	0.191	0.191
R^2	0.0095	0.0178	0.0096	0.0179	0.0140	0.0240	0.0140	0.0240
Observations	994,384				1,547,407			

Results of the estimation of Equation 1 by OLS with a binary variable equal to one if the respondent reports smoking every day or most days as the dependent variable using data from the 2005−2016 waves of the BRFSS, estimated separately by sex. "Basic demographic controls" include age in years and race dummies (White, Black, Asian, Pacific Islander, multiracial, "other," and missing), while "state characteristics" include the natural log of state population, the state unemployment rate, gross state product, the natural log of state personal income, the state poverty rate, and the prevailing state minimum wage. All estimations include month, year, and state fixed effects and are weighted using BRFSS survey weights. Standard errors are clustered at the state level and are reported in parentheses.

* $p<0.10$, ** $p<0.05$, *** $p<0.01$.

9 Figures

Figure 1
Sexual Orientation Anti-Discrimination Laws: 2005.
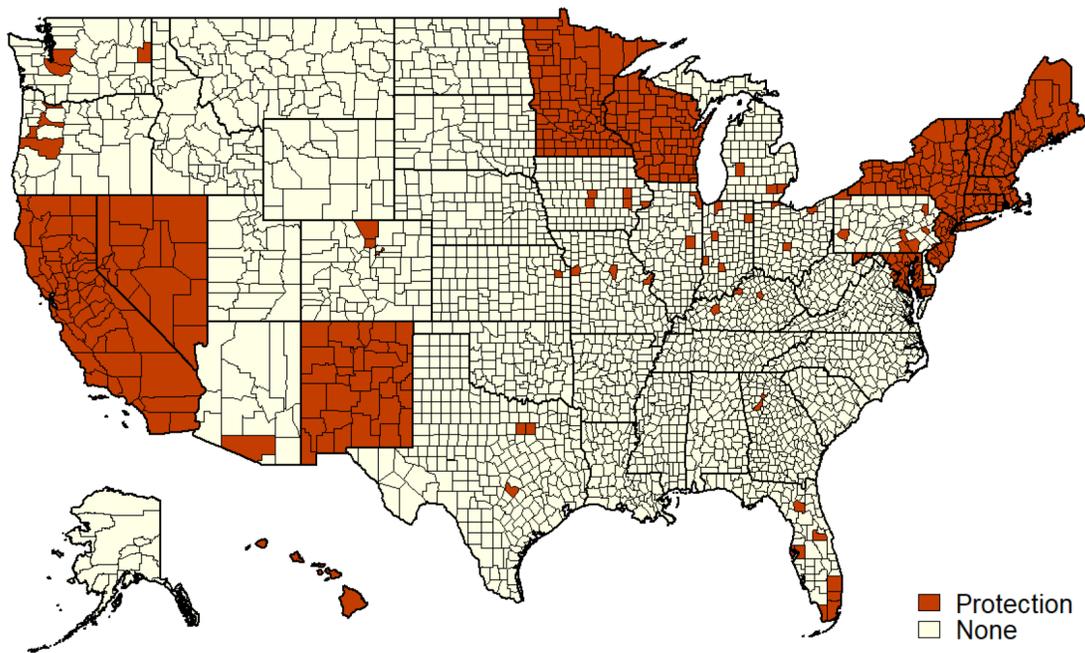
County-level data on sexual orientation anti-discrimination laws as of 2005. This figure originally appears as Figure 1 of Delhommer (2020).

Figure 2
Sexual Orientation Anti-Discrimination Laws: 2016.
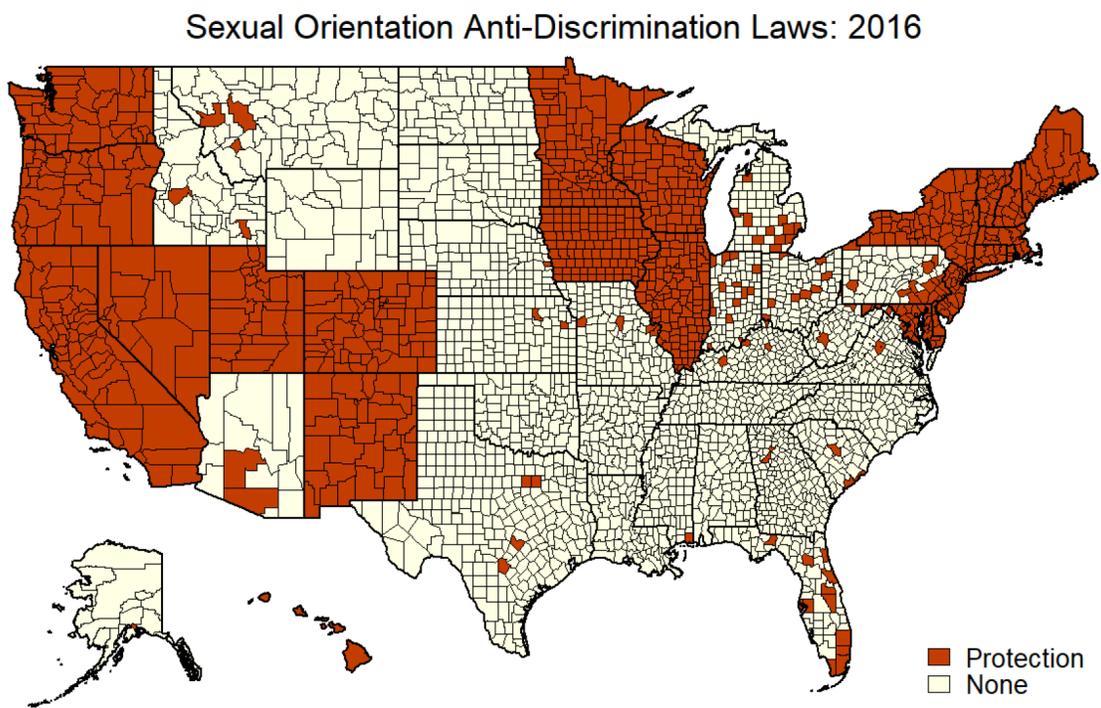
County-level data on sexual orientation anti-discrimination laws as of 2016. This figure originally appears as Figure 2 of Delhommer (2020).

Figure 3

Figure 3
Number of Mental Health Days "Not Good" by Bin: Males.
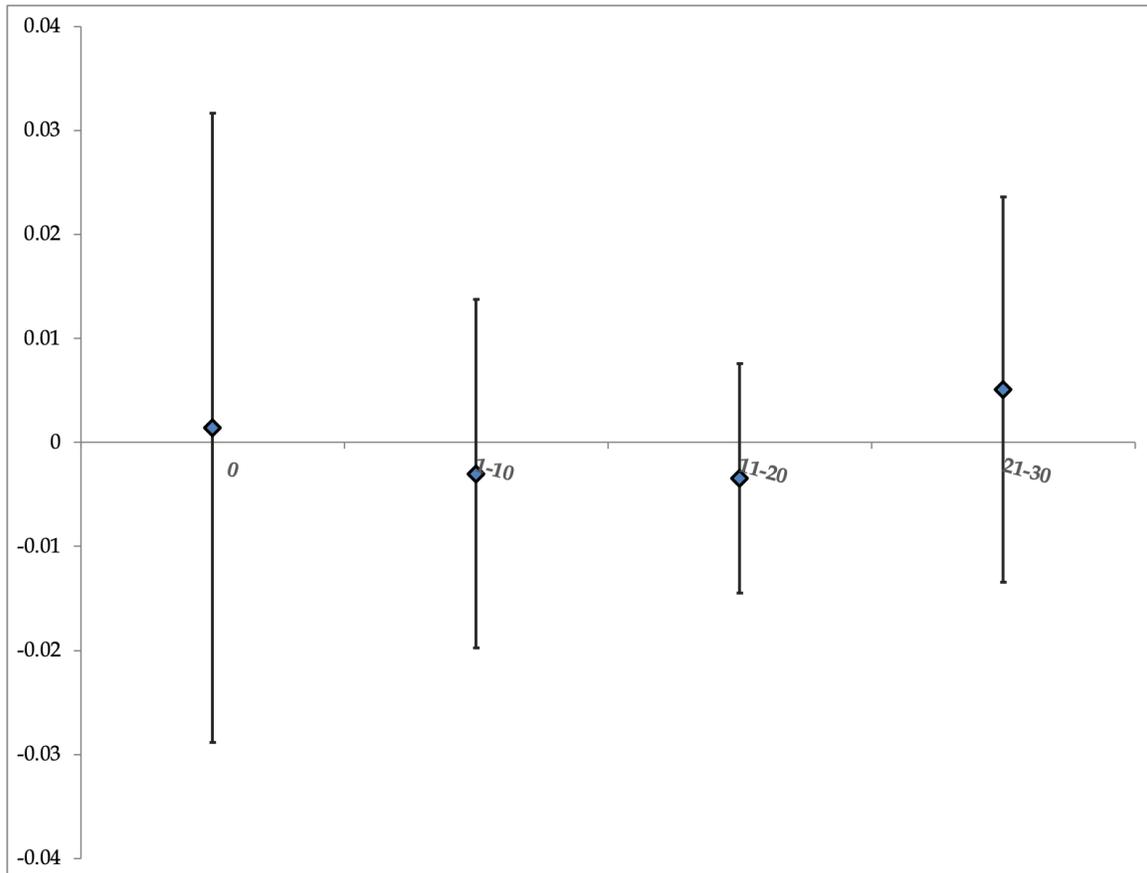
Coefficients on the interaction term, Law × SSP, from the estimation of Equation 1 by OLS for males with a binary variable equal to one if the respondent's reported number of mental health days that were "not good" falls in the bin range as indicated on the horizontal axis. This specification of Equation 1 includes neither demographic controls nor state characteristics, but includes month, year, and state fixed effects. Standard errors are clustered at the state level.

Figure 4
Number of Mental Health Days "Not Good" by Bin: Females.
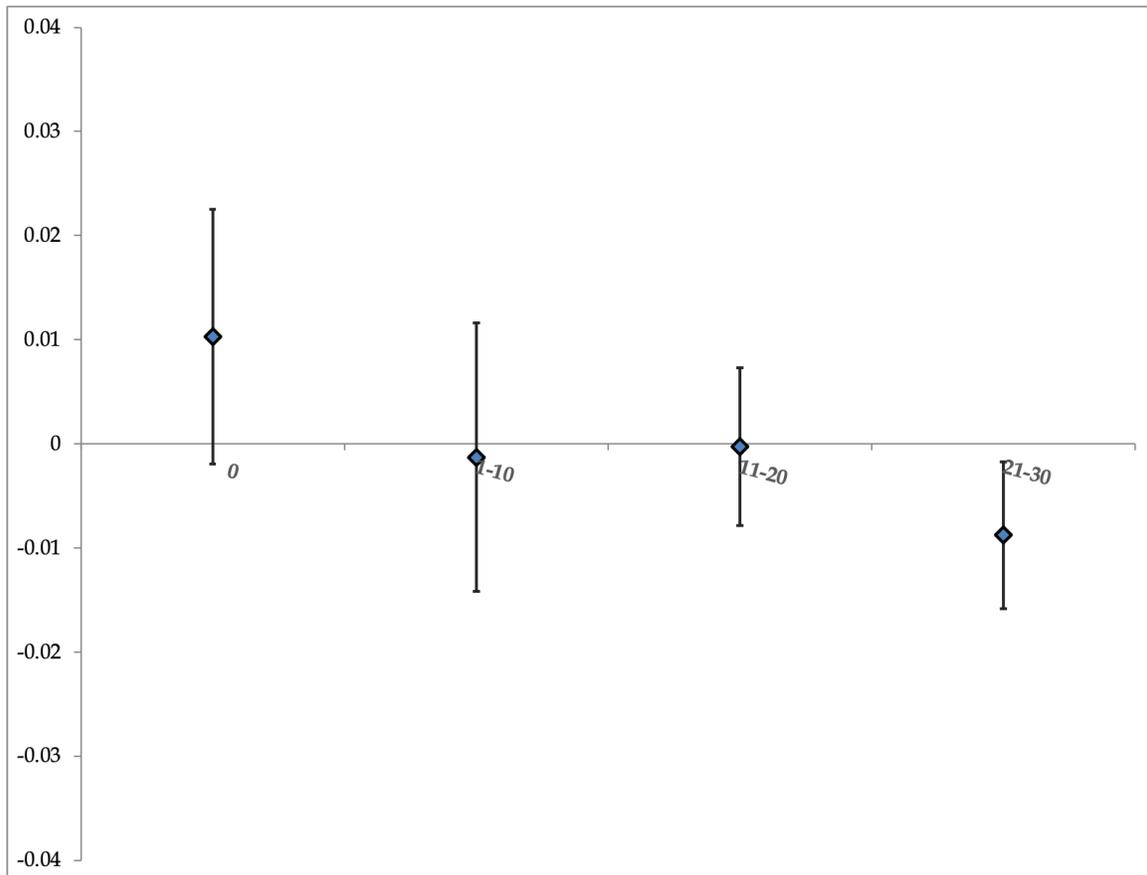
Coefficients on the interaction term, Law × SSP, from the estimation of Equation 1 by OLS for females with a binary variable equal to one if the respondent's reported number of mental health days that were "not good" falls in the bin range as indicated on the horizontal axis. This specification of Equation 1 includes neither demographic controls nor state characteristics, but includes month, year, and state fixed effects. Standard errors are clustered at the state level.

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