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Gaps in Mental Healthcare Use and Perceived Quality between
Privately Insured LGB and Heterosexual Individuals in the United States

By

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Master's thesis submitted in partial fulfillment for the completion of the
Master of Public Health degree
Yale School of Public Health, Health Policy

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Abstract

Previous research has identified significantly heightened levels of mental health issues and psychological distress among lesbian, gay, and bisexual (LGB) individuals in the U.S., as well as greater mental health service utilization among this population. Using a nationally representative sample of privately insured adults in the U.S., we investigate differences in mental healthcare utilization, characteristics of mental healthcare received, and perceived quality of care between LGB and heterosexual individuals. Key results find that privately insured LGB men and women are significantly more likely than their heterosexual counterparts to have used outpatient mental healthcare as well as out-of-network (OON) outpatient mental healthcare in the past year. This study also identifies key gender differences in characteristics of mental healthcare use and perceived quality of care among LGB mental healthcare users. LGB women are significantly more likely than Straight women to have a higher mental health condition severity, used overnight inpatient mental healthcare in the past year, and give a low provider rating for their mental healthcare provider. In contrast, LGB men are significantly more likely than Straight men to have seen 3 or more mental healthcare providers in the past year, but are significantly less likely to indicate that their mental healthcare provider does not spend enough time with them, or give a low provider rating. These findings address a gap in literature on perceived quality of mental healthcare among LGB adults in the U.S., and call particular attention to the need to improve the perceived quality of care for LGB women.

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Introduction

The topic of mental health and homosexuality has a history of political controversy. The outdated definition of homosexuality as a mental disorder in the Diagnostic and Statistical Manual (DSM-II) was only deleted from the manual in 1973 after gay activists' protests at the time moved the American Psychological Association (APA) to vote for this change (Mayes, Horwitz, 2005). Given this historical background, researchers have emphasized how research on mental health of lesbian, gay, and bisexual (LGB) individuals is often subject to biased interpretation (Cochran, 2001; Bailey, 1999). Keeping this in mind, research on the mental health of LGB individuals plays a critical role in identifying unmet needs in LGB mental healthcare access, use, and quality, in order to inform policies that create a better mental healthcare environment for sexual minorities.

Disparities in Mental Illness Prevalence

Significant mental health disparities exist between LGB and heterosexual individuals. Recently, a 2016 study on National Health Interview Survey data found that LGB individuals tend to have greater self-reported mental health and substance abuse issues such as psychological distress and smoking compared to their heterosexual counterparts (Gonzales, Przedworski, & Henning-Smith, 2016). Similarly, a systematic review of studies examining the mental health of sexual minorities found greater risks for depression, anxiety, suicide and substance-related problems among sexual minorities than heterosexual individuals (Plöderl & Tremblay, 2015). Differences in mental health and substance abuse exist between lesbian, gay, and bisexual individuals as well. The NHIS study found differences in mental health status between sexual orientation groups, such as a higher prevalence and odds of psychological distress among bisexual adults than other groups (Gonzales et al., 2016). Minority stress, a conceptual

framework explained in the following section, has been cited as a potential cause of these disparities.

While various underlying causes contribute to the high prevalence of mental illnesses among sexual minorities, one widely cited concept is that of minority stress. The author of a meta-analysis on the prevalence of mental disorders in LGB individuals discusses the conceptual framework of *minority stress*, which dictates that “stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems” (Meyer, 2003). LGB individuals have historically faced stigma, prejudice, and discrimination from society in the U.S. Structural changes such as the declassification of homosexuality as a mental disorder in the *Diagnostic and Statistical Manual of Mental Disorders* and the Supreme Court ruling in *Obergefell v. Hodges* upholding same-sex couples’ right to marriage are certainly steps of progress. However, LGB individuals may still experience stressful social environments due to existing stigma, prejudice, and discrimination, which could lead to mental health problems.

Disparities in Mental Health Service Use

With the amount of existing literature on the higher prevalence of mental health issues among LGB individuals than heterosexual individuals, it is not surprising that mental health service use tends to be higher among this population as well. In 2003, Cochran et al. conducted a study using data from the MIDUS (Midlife in the United States), a nationally representative survey of 2,917 midlife adults (Cochran, Mays, & Sullivan, 2003). It found a higher frequency of mental health service use among LGB participants than heterosexual participants (Cochran, 2003). Specifically, after controlling for demographics as well as health insurance status, gay-bisexual men were more likely than heterosexual men to report having used at least one mental

health service over the past 12 months (Cochran, 2003). The same trend was found for lesbian-bisexual women as well (Cochran, 2003). The MIDUS survey measured four types of mental health service use, which were: seeing a mental health provider, seeing a general physician for mental/emotional complaint, attending a self-help group, and taking psychiatric medication (Cochran, 2003). While this study identified disparities in mental health service use between LGB and heterosexual individuals in a nationally representative sample, it is constrained by a few limitations. Eligible respondents fell in the age range of 25 to 74, which excludes young adults. Moreover, trends in mental healthcare use may have changed since the study was conducted in 2003. More recently, a study in 2017 on adults interviewed in the National Health Interview Survey (NHIS) 2013-2014 found that LGB adults are more likely to use mental health services than heterosexual adults (Cochran, Björkenstam & Mays, 2017).

Other studies on LGB mental healthcare use have been conducted on a smaller subset of the U.S. population. A study on a nationally representative sample of youths comparing the mental health and service use between sexual minority youth (SMY) and their peers found that a significantly higher percentage of SMYs used mental health services than their peers (Williams & Chapman, 2011). Even with this higher utilization, however, the study found that unmet need in mental healthcare was still greater for SMYs than their peers, speaking to the higher prevalence of mental illness among SMYs (Williams & Chapman, 2011). Similarly, a study looking at mental service use among LGB adults of 50 years and older in the New York City Community Health Survey also found that LGB adults were significantly more likely to use counseling services and psychiatric medication than heterosexual adults (Stanley & Duong, 2015). This particular study's analyses found that differences in mental health service use persisted even after controlling for mediating factors such as perceived general health,

psychological distress, and alcohol use (Stanley & Duong, 2015). The researchers conclude with an interpretation that “LGB older adults may be accessing treatment at elevated rates for reasons beyond the burden of general medical, mental, and behavioral health concerns” (Stanley & Duong, 2015). In other words, even for LGB older adults without a diagnosed mental health problem, mental health service use may be a way to address the effects of society’s stigma, prejudice, and discrimination against their identity.

Disparities in Mental Healthcare Access

The high mental health service use among LGB groups may be more indicative of the high prevalence of mental health issues in this population and less so a sign of good mental healthcare access among this population. The next section explores structural barriers to mental healthcare access for LGB individuals.

Given the high prevalence of mental illness among LGB individuals, it is crucial to examine structural barriers in mental healthcare access in order to ensure that LGB individuals with mental health problems can access quality care seamlessly. Literature on mental health insurance access among LGB individuals is limited, but is available for general health insurance. To date, studies have found disparities in health insurance coverage between adults in same-sex relationships and opposite-sex relationships, in particular among women. Compared to women in different-sex relationships, women in same-sex relationships are significantly less likely to have health insurance (Buchmueller & Carpenter, 2010), less likely to have met with a medical provider over the past year (Heck, Sell, & Gorin, 2006), “more likely to report unmet medical needs, and were less likely to have had a recent mammogram or Pap test” (Buchmueller & Carpenter, 2010). Findings on the disparity between men in different-sex relationships and same-

sex relationships, on the other hand, are mixed. For example, one study found that compared to men in different-sex relationships, men in same-sex relationships are less likely to have health insurance, and more likely to report unmet needs in medical care (Buchmueller & Carpenter, 2010). On the other hand, another study showed that healthcare access among men in same-sex relationships were at least equivalent to men in different-sex relationships (Heck et al., 2006). Better understanding disparities in health insurance coverage can help inform new areas of research and policy to improve health insurance coverage for LGB individuals.

In addition to disparities at the national level, state-specific disparities in insurance coverage between adults in same-sex relationships and opposite-sex relationships has been examined as well. Using data from the American Community Survey, researchers identified and compared insurance status between adults in same-sex relationships and married adults in opposite-sex relationships (Gonzales & Blewett, 2014). Not only did the study find that adults in same-sex relationships were less likely to have employer-sponsored insurance than adults in married opposite-sex relationships, but it also identified state-level variations such as that the ESI coverage gap was smaller in states that had recognized same-sex relationships through the legalization of same-sex marriage, civil unions, and broad domestic partnerships. Access to health insurance remains to be an obstacle to ensuring access to healthcare among the LGB population, and it poses a greater barrier in certain States (Gonzales & Blewett, 2014).

As illustrated here, several studies using nationally representative data have been conducted to characterize disparities in insurance coverage between LGB and heterosexual individuals (Buchmueller & Carpenter, 2010; Heck et al., 2006; Gonzales & Blewett, 2014). However, a major limitation common across these studies is that sexual orientation was not directly measured, but rather, sexual orientation was assumed from respondents' intrahousehold

relationships, since the federal surveys did not ask about the respondents' sexual orientation. As sample statistics of our study demonstrates (Table 1), there are differences between LGB and Straight individuals in their trends of marriage and relationships, for example that a greater percentage of Straight individuals than LGB individuals are married. Such differences in the marital status distribution between LGB and Straight individuals points to potential limitations in past studies that have defined sexual orientation based on same-sex partnership status. Only looking at individuals who are married or living with their partners may exclude a larger portion of LGB individuals than of Straight individuals.

Perceived Quality of Mental Healthcare among LGB Individuals

While insurance coverage is a well-documented issue in LGB healthcare, quality of care may be another crucial but less researched issue that LGB individuals face when using mental health services. A 2012 study using data from the Medical Expenditure Panel Survey (MEPS) examined general healthcare and found that, compared to individuals in different-sex married couples, individuals in same-sex couples may experience issues such as difficulty seeing specialists (AOR = 0.6; SE = 0.1), getting timely medical care (AOR = 0.6; SE = 0.1) and timely drug prescriptions (AOR = 2.4; SE = 0.7) (Clift & Kirby, 2012). Perceived quality of care differs as well. In evaluating their relationship with providers, individuals in same-sex couples report higher dissatisfaction with the amount of time spent (AOR = 0.7; SE = 0.1). and level of respect shown by the provider (AOR = 0.6; SE = 0.2) than different-sex married couples (Clift & Kirby, 2012). While this type of study is crucial to understanding issues in healthcare quality for LGB individuals, some major limitations exist. First of all, sexual orientation was not directly measured. Secondly, it used data collected through the MEPS from 1996 to 2007, meaning that the produced results were an average over a 12-year period (Clift & Kirby, 2012). Lastly, for the

purposes of our study, it is important to note that this study looked at general healthcare quality, rather than mental healthcare specifically. To the extent of our knowledge, this type of study characterizing perceived quality of care has not been conducted on the subject of LGB mental health.

In researching quality of care, a distinction is made between perceived and technical quality of care. Subjective, perceived quality of care is assessed through patient surveys and questionnaires, while objective, technical quality is measured through clinical and administrative data (Øvretveit, 1988). While both are important metrics of quality of care, studies suggest that they assess different aspects of quality of care. For example, a 2006 study found that patient-reported global ratings of healthcare and provider communication did not correlate significantly with technical quality of received care in two managed care organizations (Chang et al., 2006). Moreover, another study comparing subjective and objective measures of hospital service quality measured subjective quality through patient survey questions on aspects such as admission experience and staff interaction, while it measured objective quality through technical elements such as number of hospital visits and average length of hospital stay (Kozyra, Zmysłona, & Madziarska, 2014). Again, this study found no significant correlation between any two subjective and objective quality of care metrics. Given these findings, researchers have suggested that subjective and objective quality of care are two different types of measurements (Kozyra et al., 2014).

If perceived and technical quality of care measure slightly different phenomena, it is crucial to examine which measurement best fits our research question. Technical quality looks specifically at how clinical decisions and treatment choices compare with guidelines that have been established to improve health outcomes (Hanefeld, Powell-Jackson, & Balabanova, 2017).

In contrast, perceived quality of care is thought to be a key driver of service utilization (Hanefeld et al, 2017). Furthermore, perceived quality of care may be particularly important when researching populations that are marginalized in society. Studies have found that sexual minority individuals may assess quality of care based on whether the care environment was supportive and non-discriminatory towards them (Beyrer et al., 2012 as cited in Hanefeld et al., 2017). In our study, which analyzes LGB mental healthcare utilization and quality, it is crucial to use perceived ratings of care quality in order to understand how individuals' experience using mental healthcare influences their perception of the quality of care, and subsequently their utilization.

Dissatisfaction of LGB individuals with their providers may be partly rooted in the lack of provider cultural sensitivity. The implications of poor provider relationships are well characterized by a study on African American sexual minority women, a third of whom reported a negative health care experience in the past five years (Li, Matthews, Aranda, Patel, & Patel, 2015). Particularly relevant to this study is that, one fourth of individuals who reported negative experiences raised discrimination based on race/ethnicity (70.4%), gender (58.2%), and sexual orientation (46.2%) as a primary reason (Li et al., 2015). It is clear that lack of cultural competency and sensitivity towards patient identities poses a substantial barrier to access to quality healthcare.

Historically, studies have found that clinicians may hold negative views towards sexual minority patients. Few recent studies examine this issue. Results from a survey on 2544 psychologists found that the majority of psychologists at the time knew of biased, inappropriate mental healthcare provided to lesbian and gay patients, such as those who viewed homosexuality as an illness (Garnets, Hancock, Cochran, Goodchilds, & Peplau, 1991). Moreover, a study on 417 psychologists found that psychologists tended less to recommend custody when shown

vignettes of homosexual couples than heterosexual couples (Crawford, McLeod, Zamboni, & Jordan, 1999). These studies support LGB patients' negative experiences with mental healthcare providers, and underscore how prejudice and lack of cultural sensitivity remains to be an unresolved barrier in high quality mental healthcare for homosexual individuals.

Limitations of Past Research and Study Objective

Gaps in literature exist in the subject of LGB mental healthcare use and perceived quality of care. First, few national studies on the difference in mental healthcare utilization by self-reported sexual orientation have been conducted, none of which have closely investigated the detailed characteristics of mental health services received. To the extent of our knowledge, the two national studies on this topic on U.S. adults was conducted in 2003 (Cochran, Mays, & Sullivan, 2003) and 2017 (Cochran, Björkenstam & Mays, 2017), and the former was limited to a sample of midlife adults age 25 to 74. Additionally, no national study on perceived mental healthcare quality among LGB individuals has been conducted to our knowledge. While a 2012 study has identified disparities in general perceived healthcare quality (Clift & Kirby, 2012), our study will examine mental healthcare specifically. Moreover, many past studies have typically defined sexual orientation indirectly, looking at samples of gay men and lesbian women in same-sex relationships (Clift & Kirby, 2012; Buchmueller & Carpenter, 2010; Heck et al., 2006; Gonzales & Blewett, 2014). In contrast, our study measures sexual orientation directly through self-reporting. This is critical because it will ensure that our study is inclusive of LGB individuals who were otherwise missed in previous analyses, such as those who are single and/or bisexual.

Using data from a national survey representative of privately insured adults in the U.S., we will address each of these research areas. We will first compare mental health service utilization over the past 12 months between LGB and heterosexual privately insured adults. Additionally, we will examine the differences in characteristics of the mental healthcare received. Lastly, we will examine disparities in perceived quality of care by comparing the perceived quality of the provider between LGB and heterosexual individuals who used mental health services over the past 12 months. By analyzing data from a nationally representative sample of privately insured U.S. adults, this study will contribute insights in LGB mental healthcare utilization, characteristics of mental healthcare received, and perceived quality, that have not yet been thoroughly addressed in the existing body of literature.

Methods

Study Design and Sample

This cross-sectional study analyzes data collected by Susan Busch and Kelly Kyanko on past year mental healthcare utilization. Respondents were recruited through a third-party online panel that uses probability-based sampling. All surveys were completed between August and September of 2018.

Respondents qualified to take the survey if they were between ages 18 and 64, privately insured, had a plan that included a provider network, and met at least one of the following criteria: 1) Used any outpatient care in the past year, or 2) Used any outpatient mental health care in the past year. The latter is a subset of the former criterion, and the study oversampled individuals who used mental healthcare in the past year. 2,181 individuals who met these eligibility criteria completed the survey. For this study, respondents who refused to respond to or

had missing data on key variables regarding their sexual orientation or past year outpatient mental healthcare use were removed from analyses, yielding a final sample of 2,025 individuals. This total sample of n=2,025 was used only for 2 analyses that required the full sample, which tested for presence of past year mental healthcare use or past year OON mental healthcare use. All other analyses looked at a subset (n=827, out of which 107 were LGB) of this total sample, who indicated that they had used outpatient mental healthcare in the past year. This smaller sample was used to test for details around past year mental healthcare use, such as type of mental health treatment received, which require a sample of individuals who used mental healthcare.

In all analyses, weights accounting for geodemographic indicators and nonresponse were applied to make the sample nationally representative of the privately insured adult population in the U.S.

Measures

Sexual Orientation

The survey asked respondents to select one of the following to indicate their sexual orientation: Gay or lesbian, Bisexual, Straight, or Something else. Within our sample, 100 identified as Gay or lesbian, 84 identified as Bisexual, 43 as Something else, and 1,841 as Straight. The Gay or lesbian and Bisexual groups were combined to create a Lesbian, Gay, or Bisexual (LGB) group with a total sample size of 184, among which 107 used mental healthcare in the past year, in order to ensure sufficient sample size to address our research questions. Those who identified as Something else were removed from analyses due to their small sample size and expected qualitative difference from both the LGB or Straight groups. Designs effects due to the

sampling strategy may limit statistical power, but sufficient power is expected to examine our key outcomes of interest.

Outcome Variables and Other Variables

In order to address our research questions, the study categorizes analyses into three broad categories of outcomes: Mental healthcare utilization, Characteristics of mental healthcare received, and Perceived quality of mental healthcare received. Outcome measures used in statistical tests for each analysis category are indicated below. Other variables collected include demographic variables such as age, education level, race and ethnicity, gender, and marital status.

Mental healthcare utilization

4 variables were used to assess our research questions around mental healthcare use: Past year outpatient mental healthcare use (Yes, No), Past year OON outpatient mental healthcare use (Yes, No), Past year overnight inpatient mental healthcare use (Yes, No), and Past year emergency room mental healthcare use (Yes, No). Another variable was used to compare mental healthcare use with outpatient general healthcare use: Past year general medical care use (Yes, No).

Characteristics of mental healthcare received

3 additional variables were used to analyze the characteristics of mental healthcare received: Number of outpatient mental healthcare providers seen in the past year (1, 2, or 3 or more), Past year mental healthcare use from primary care provider (Yes, No), and Type of mental healthcare received in past year (medication, counseling, or case management/care coordination). The first variable was recoded into a binary variable to indicate whether they saw

3 or more mental healthcare providers seen in the past year. Some respondents who had seen multiple outpatient mental healthcare providers in the past year reported the type of treatment they received from 2 providers. Therefore, the treatment type variable was recoded as binary dummy variables indicating whether the respondent had received that treatment type from either of the mental healthcare providers they saw in the past year (E.g. A respondent who received medication from 1 provider but not the other was categorized as Yes in a Yes/No variable for medication use).

Each respondent's mental health condition severity was also analyzed using their K6 score. The K6 score was also recoded into a binary variable to indicate whether they had a high K6 score (13 or higher) or not, to test for high mental health condition severity.

Perceived quality of mental healthcare received

3 variables were used to test hypotheses related to perceived quality of mental healthcare received: How often the provider spent enough time with them (Never, Sometimes, Usually, Always), How often the provider or their office responded within the day or the next day when contacted (Never, Sometimes, Usually, Always), and Provider rating (0-10, with 0 as the worst provider possible). The first two variables were recoded as binary variables indicating whether or not Never or Sometimes was selected, to test for low satisfaction with time spent or response time. The provider rating variable was converted into whether or not 5 or lower on the 10-point scale was selected, to test for low provider rating. Similar to the treatment type variable, some respondents who saw multiple mental healthcare providers in the past year reported 2 provider ratings. These individuals were coded as having a low provider rating if they reported a 5 or lower on the 10-point scale for either of their providers.

Method of Analysis

Chi-square tests were used to compare the demographic characteristics of individuals who identified as LGB and those who identified as Straight.

Logistic regression models were estimated for all outcome measures listed in the previous section due to the categorical, binary nature of the original or recoded outcome variables. Sexual orientation was always included as an independent variable, with the Straight group as the omitted group. Independent variables also included a vector of individual-level variables that have been found to be related to mental healthcare access and utilization (Cochran, Mays, & Sullivan, 2003), consisting of age group dummies (18-29, 30-44, 45-59, 60+), education level dummies (High school or lower, Some college or higher), race and ethnicity dummies (White, Hispanic, Non-Hispanic Non-White), and gender dummies (Male, Female). Separate models were not created for each gender due to the limited sample size of the LGB group who used mental healthcare in the past year. Regression models included an interaction term between gender and sexual orientation to account for differential effects. Outputs of all regression models are shown as predictive probabilities in this paper. All regression models and chi square tests were run using R, version 3.4.2 (Murdoch, 2017) with survey weights.

Results

Sample Demographics

Among the total sample, a weighted 5.6% of individuals identified as lesbian, gay, or bisexual. LGB and Straight individuals were significantly different in their age group distribution, with LGB individuals skewing younger. 28.1% of the LGB group was between ages 18-29, and only 4.3% was of age 60 or older, compared to 16.6% and 14.2% respectively, for

Straight individuals (Table 1). The gender distribution was significantly different as well. 43.3% of the LGB individuals were women, compared to 55.3% of the Straight individuals (Table 1). Additionally, the distribution of marital status was significantly different between the LGB and Straight groups. With the prevalence of prejudice and discrimination against sexual minorities, and the right of same-sex couples to marry being a fairly recent development nationwide, it is not surprising that a greater percentage of Straight individuals (65.6%) than LGB individuals (40.7%) are married. In contrast, 15.3% of LGB individuals indicate that they are living with a partner, compared to 6.3% of Straight individuals. Education levels and race/ethnicity are similar in distribution between LGB and Straight individuals. The majority of individuals went to some college or pursued a higher degree of education, and were White, Non-Hispanic.

Table 1

Characteristics of Survey Respondents by Sexual Orientation: Weighted Percentages Shown

Characteristic	LGB (%)	Straight (%)	p
Age (Years)**			<0.001
18-29	28.1	16.6	
30-44	30.6	30.3	
45-59	37.0	38.9	
60+	4.3	14.2	
Education Level			0.351
High school or lower	21.2	25.5	
Some college or higher	78.8	74.5	
Race and Ethnicity			0.284
White, Non-Hispanic	74.5	68.0	
Hispanic	11.9	12.9	
Non-White, Non-Hispanic	13.6	19.0	
Gender*			<0.050
Male	57.7	44.7	
Female	42.3	55.3	
Marital Status**			<0.001
Married	40.7	65.6	
Widowed	0.3	1.3	
Divorced	7.8	8.3	
Separated	1.1	1.1	

Never Married	34.8	17.4
Living with Partner	15.3	6.3

Note: Actual sample size is 184 LGB individuals and 1841 Straight individuals. The difference in the distribution of age group, gender, and marital status was statistically significant between the two groups.

Mental healthcare utilization

Predictive probabilities calculated using logistic regression models are significantly different between LGB and Straight individuals for Past year outpatient mental healthcare use and OON outpatient mental healthcare use. After adjustment, LGB men are significantly more likely to have past year outpatient mental healthcare use (37.2%) than Straight individuals (13.7%) (Table 2). A similar trend was observed for women. After adjustment, LGB women are significantly more likely to have past year outpatient mental healthcare use (34.7%) than Straight individuals (15.4%). With regards to outpatient OON mental healthcare use, the direction of effects differs by gender. Among those who had past year mental healthcare use, Straight men are significantly more likely to have past year OON outpatient mental healthcare use (33.3%) than LGB men (18.3%) after adjustment. In contrast, LGB women (38.1%) are significantly more likely than Straight women (24.2%) or LGB men (18.3%) to have past year OON outpatient mental healthcare use, after adjustment. The likelihood of past year overnight inpatient care was significantly higher for LGB women (7.8%) than Straight women (2.5%), after adjustment, but not for men. There was no significant difference in emergency room care use for mental health conditions between LGB and Straight individuals, for either gender. The difference in likelihood of mental healthcare use between LGB and Straight group is particularly stark when taking into account the finding that likelihood of past year outpatient general healthcare use is not significantly different between the groups, for either gender.

Table 2**Past year Mental Healthcare Utilization: Predictive Probabilities Shown**

	Men		Women	
	Straight % (95% CI)	LGB % (95% CI)	Straight % (95% CI)	LGB % (95% CI)
Past year outpatient mental healthcare use	13.7 (9.9, 17.6)	37.2** (24.4, 49.9)	15.4 (11.4, 19.4)	34.7** (20.7, 48.7)
Past year outpatient OON mental healthcare use	33.3 (24.2, 42.3)	18.3* (7.8, 28.7)	24.2 (16.9, 31.4)	38.1* (23.0, 53.2)
Past year overnight inpatient mental healthcare use	2.6 (0.1, 5.1)	3.7 (-1.4, 8.8)	2.5 (0.2, 4.9)	7.8* (-1.1, 16.7)
Past year emergency room care for mental health condition	3.2 (0.6, 5.9)	4.7 (-0.7, 10.1)	5.1 (1.6, 8.6)	8.5 (0.5, 16.5)
Past year outpatient general healthcare use	95.8 (93.5, 98.1)	92.4 (85.5, 99.3)	96.3 (94.3, 98.3)	94.7 (88.8, 100.7)

Note: The actual sample size is 2,025 (630 Straight men, 91 LGB men, 1211 Straight women, 93

LGB women) for analyses for Past year outpatient mental healthcare use and Past year outpatient

general healthcare use. The actual sample size is 827 (224 Straight men, 48 LGB men, 496

Straight women, 59 LGB women) for analyses for Past year OON outpatient mental healthcare

use, Past year overnight inpatient mental healthcare use, and Past year emergency room care for

their mental health condition. Shown predictive probabilities are based on separate logistic

regression models estimated for each dependent variable, controlling for age, education,

race/ethnicity, gender, and an interaction term between gender and sexual orientation.

Significances indicated in asterisks refer to the difference between Straight and LGB individuals

for each gender. * $p < 0.05$, ** $p < 0.001$. The difference between LGB men and LGB women was

significant at $p = 0.05$ for Past year outpatient OON mental healthcare use.

Characteristics of mental healthcare received

Results show that, among past year mental healthcare users, LGB men are significantly more likely to have seen 3 or more different mental healthcare providers in the past year (14.2%) than Straight men (5.6%) after adjustment (Table 3). While the direction of the effect was similar for women, with 11.7% of LGB women seeing 3 or more mental healthcare providers compared to 9.7% of Straight women, this was not a statistically significant difference. We also find that, after adjustment, LGB women (55.1%) are significantly more likely to have a K6 score of 13 or higher, indicating higher mental illness severity, than Straight women (34.8%) or LGB men (32.6%). The likelihood of receiving medication, counseling, or care management services from a mental healthcare provider, or receiving mental healthcare from a primary care provider, was not significantly different between LGB and Straight individuals for either gender.

Table 3
Characteristics of mental healthcare received: Predictive Probabilities Shown

	Men		Women	
	Straight % (95% CI)	LGB % (95% CI)	Straight % (95% CI)	LGB % (95% CI)
Saw 3 or more different mental health providers in the past year	5.6 (1.8, 9.5)	14.2* (3.8, 24.5)	9.7 (4.3, 15.1)	11.7 (0.9, 22.5)
Severity of mental illness (13 or more points on the K6 score)	29.2 (21.1, 37.4)	32.6 (19.6, 45.7)	34.8 (26.5, 43.1)	55.1* (39.6, 70.1)
Received mental healthcare from a primary care provider	27.2 (19.1, 35.2)	31.2 (18.1, 44.3)	26.8 (19.3, 34.4)	25.4 (12.4, 38.5)
Received medication from any specialty provider	43.3 (34.0, 52.6)	54.9 (40.8, 69.1)	43.8 (35.1, 52.5)	51.0 (35.5, 66.5)
Received counseling from any specialty provider	72.8 (64.2, 81.3)	70.2 (56.7, 83.7)	82.6 (76.5, 88.8)	79.6 (67.4, 91.8)

Received case management or care coordination services from any specialty provider	10.5 (4.2, 16.8)	9.0 (0.8, 17.2)	5.3 (1.8, 8.9)	2.6 (-1.9, 7.1)
Received medication and counseling from any specialty provider	22.9 (15.3, 30.6)	30.3 (17.2, 43.4)	28.9 (20.8, 37.0)	30.3 (16.3, 44.3)

Note: The actual sample size is 827 (224 Straight men, 48 LGB men, 496 Straight women, 59 LGB women) for these analyses. Shown predictive probabilities are based on separate logistic regression estimated for each dependent variable, controlling for age, education, race/ethnicity, gender, and an interaction term between gender and sexual orientation. Significances indicated in asterisks refer to the difference between Straight and LGB individuals for each gender. * p<0.05, **p<0.001. The difference between LGB men and LGB women was significant at p=0.05 for Severity of mental illness.

Perceived quality of mental healthcare received

After adjustment, Straight men are significantly more likely to indicate that their mental healthcare provider never or only sometimes spent enough time with them (25.9%), than LGB men (13.5%). Although not significant, the effect trends in the opposite direction for women. LGB women are more likely to indicate this (25.3%) than Straight women (21.6%), after adjustment. The likelihood of indicating that their mental healthcare provider or their office never or only sometimes responded quickly was not significantly different between LGB and Straight individuals for either gender. Lastly, Straight men are significantly more likely (20.8%) than LGB men (7.9%) to give a low provider rating (5 or lower on a 1-10 scale), after adjustment. The opposite effect was observed among women. LGB women are significantly more likely (32.1%) than Straight women (19.9%) or LGB men (7.9%) to give a low provider rating, after adjustment.

Table 4**Perceived Quality of mental healthcare received: Predictive Probabilities Shown**

	Men		Women	
	Straight % (95% CI)	LGB % (95% CI)	Straight % (95% CI)	LGB % (95% CI)
How often did this provider spend enough time with you (Never/Sometimes)	25.9 (17.6, 34.2)	13.5* (4.7, 22.2)	21.6 (14.6, 28.6)	25.3 (12.1, 38.5)
When you contacted the provider or their office, how often did you get a response that same day or the next day? (Never/Sometimes)	20.5 (13.2, 27.9)	18.6 (8.3, 28.9)	20.7 (13.8, 27.6)	22.8 (10.3, 35.2)
Low provider rating (5 or lower on a 0-10 scale)	20.8 (13.3, 28.3)	7.9* (0.8, 14.9)	19.9 (13.1, 26.8)	32.1* (17.0, 47.1)

Note: The actual sample size is 827 (224 Straight men, 48 LGB men, 496 Straight women, 59 LGB women) for these analyses. Shown predictive probabilities are based on separate logistic regression estimated for each dependent variable, controlling for age, education, race/ethnicity, gender, and an interaction term between gender and sexual orientation. Significances indicated in asterisks refer to the difference between Straight and LGB individuals for each gender. * $p < 0.05$, ** $p < 0.001$. The difference between LGB men and LGB women was significant at $p = 0.05$ for Low provider rating.

Discussion and Conclusion

The politicized nature of data collection on sexual orientation in publicly funded datasets has posed a limitation to past research on LGB mental healthcare. While many researchers and advocates in the U.S. have argued for sexual orientation data collection since the 1980s, many public datasets were late to include, or still do not include, questions related to sexual orientation in their surveys due to fear towards political criticism, such as in the case of The National Health and Social Life Survey, which lost funding due to pushback against their inclusion of questions

related to sexual orientation (Sell and Holliday, 2014). This is why many researchers studying LGB mental healthcare have creatively defined sexual orientation by identifying adults in same-sex relationships (Buchmueller & Carpenter, 2010; Heck et al., 2006; Gonzales & Blewett, 2014). The initiation of sexual orientation data collection in some datasets such as the National Health Interview Survey has allowed some studies to address this historical limitation, with a recent study finding a higher prevalence of mental health morbidity, functional limitations, and service use among adults who identify as LGB than heterosexual adults (Cochran, Björkenstam & Mays, 2017). With the availability of self-reported sexual orientation data in our self-administered survey, we have probed deeper into not only differences in mental healthcare utilization by sexual orientation, but also the characteristics of mental healthcare used. Moreover, past research has tended to focus on identifying insurance barriers to be a key impediment for LGB individuals to receive necessary mental healthcare in the U.S. (Buchmueller & Carpenter, 2010; Heck et al., 2006; Gonzales & Blewett, 2014). In contrast, our study focuses on privately insured adults in the U.S. By looking at this population, we explore barriers besides insurance coverage and specifically investigate issues in perceived quality of mental healthcare among LGB individuals.

In line with previous research (Cochran, Mays, & Sullivan, 2003; Cochran, Björkenstam & Mays, 2017), our study finds that LGB individuals are significantly more likely to have past year mental healthcare use than Straight individuals, after adjustment. Existing literature, which finds elevated levels of mental health service use among the general LGB population in the U.S. despite more limited healthcare access, highlights the magnitude of mental health disparities that exist for this population. Those with health insurance and the financial ability to afford mental healthcare may be driving up the LGB mental health service utilization, leaving behind a group

of LGB individuals who face access barriers and remain untreated despite having mental health conditions. By focusing on privately insured individuals in the U.S., we indeed find that among the privately insured, who don't face the typical insurance-related access issues, mental healthcare utilization is significantly higher among LGB than Straight individuals.

In addition to the presence of past year mental health service use, we also looked at the characteristics of the mental health services used. In their 2017 study, Cochran, Björkenstam, and Mays highlight the need to examine the content of provided services and mental health service provision by non-specialists in order to better understand disparities in mental healthcare use by sexual orientation (Cochran, Björkenstam & Mays, 2017). We found no statistically significant differences by sexual orientation with respect to mental health service provision by primary care providers, or receipt of medication, counseling, or care management service use from their specialty mental healthcare provider.

Additional analyses on characteristics of mental healthcare use and perceived quality of care show that effects of being LGB differ by gender. First of all, analyses on privately insured LGB women found that LGB women are significantly more likely than Straight women or LGB men to have past year OON mental healthcare use, have a K6 score of 13 or higher, and provide a low provider rating for their mental healthcare provider. LGB women are also significantly more likely than Straight women to have past year overnight inpatient mental healthcare use. While further research is needed to understand key drivers of these differences, a potential reason might be that LGB women need more complex mental healthcare than their heterosexual counterparts, as reflected by their higher likelihood of having a high K6 score as well as overnight inpatient mental healthcare use. While this is speculative, this need for more complex care among LGB women may be driving them to pursue adequate care, even if it is outside of the

provider network covered by their private insurance. The need for complex care may also be driving the lower provider ratings given by LGB women, due to the difficulty of thoroughly addressing their needs. It is important to note that no significant differences between LGB women and Straight women or LGB men were observed for the likelihood to indicate that the mental healthcare provider never or only sometimes spent enough time with them. Together, these findings suggest that privately insured LGB women are significantly more likely to be dissatisfied with their mental healthcare provider than their Straight counterparts and LGB men, due to factors besides the *amount* of time spent with the provider. Our research supports the need to address this gap in perceived quality of mental healthcare through building cultural competency among mental healthcare providers, and calls particular attention to quality of care for LGB women.

With regards to privately insured LGB men, we find that they are significantly less likely to have past year outpatient OON mental healthcare use, more likely to have seen 3 or more mental healthcare providers in the past year, and less likely to indicate that their mental healthcare provider never or only sometimes spends enough time with them, or give a low provider rating, compared to Straight men. Further research is needed to better understand why this is, but the underlying driver may differ from the story behind our findings for LGB women's mental healthcare use. Although speculative, it is possible that by seeing more mental healthcare providers, LGB men are more satisfied with the overall quality of mental healthcare they are receiving, and therefore do not pursue care outside of their provider network. A future study looking at the relationship between sexual orientation-related differences in the provider search process and perceived quality of care would help examine this hypothesis.

Although this study has methodological strengths such as direct sexual orientation data collection, it has three key limitations that should be noted. First of all, because this study was conducted as a subset of a larger study looking at drivers of OON mental healthcare use among privately insured adults in the U.S., the sampling strategy design may have not yielded enough statistical power, especially for analyses that required the smaller sample of individuals who had past year mental healthcare use. Thus in some cases where we found statistically insignificant results, we cannot say that there was not a difference, only that we did not have the statistical power to detect differences. Secondly, the sample size of LGB individuals who had past year mental healthcare use limited our ability to build separate logistic regression models by gender, despite the existence of past research showing important differential effects by gender (Cochran, Björkenstam & Mays, 2017; Cochran, Mays, & Sullivan, 2003). Instead, our models included an interaction term between gender and sexual orientation in order to detect differential effects. Third, the same reasons contributed to the choice not to analyze differential effects between bisexual and lesbian or gay individuals. With past research showing higher prevalence of psychological distress among bisexual adults (Gonzales & Blewett, 2014), we recognize the importance of looking at such heterogeneous effects. Larger samples of LGB individuals who use mental healthcare in future studies can address these three key limitations of this study. Lastly, although it is not a limitation that this study focuses on privately insured adults because it allows us to characterize issues in LGB mental healthcare beyond insurance coverage, we caution researchers from extrapolating our research findings to the LGB population in the U.S. at large. Due to differences between privately insured and other adults in the U.S., our findings should be interpreted to be representative of privately insured LGB individuals in the U.S.

Our findings pose several implications for public policy and public health research. To date, issues in healthcare access have received attention as a barrier to necessary healthcare for LGB individuals in the U.S. Although this is an area that can certainly be improved, recent changes such as the Affordable Care Act's prohibition of insurers to discriminate coverage of Essential Health Benefits on the basis of sexual orientation (Dawson & Kates, 2018), as well as legalization of same-sex marriage and its effects on employer-sponsored insurance are examples of recent nationwide changes that will help improve LGB healthcare access. Our study looks at a group of privately insured adults in the U.S. who do not experience such access issues. Yet, we still see room for improvement, particular with regards to perceived quality of care. The fact that privately insured LGB women are significantly more likely than their heterosexual counterparts to report a low provider rating for their mental healthcare provider warrants attention in public policy. This study contributes evidence to the claim for a need for more cultural competency training among mental healthcare providers in the U.S. It is crucial to take these steps in conjunction with steps towards improved healthcare access, to ensure that LGB individuals can access quality mental healthcare. Moreover, our study raises research questions with regards to different trends in mental healthcare use and perceived quality of mental healthcare between privately insured LGB women and men. The greater likelihood of LGB women than Straight women or LGB men to use OON mental healthcare and to indicate lower perceived quality of mental healthcare raise questions around different unmet needs for these individuals. Further research on how LGB adults search for their mental healthcare provider, how many mental healthcare providers they see, and how that could relate to perceived quality of mental healthcare will help contribute policy solutions to another potential area of improvement in LGB mental healthcare.

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