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Outness, Discrimination, and Serious Mental Illness Among LGBTQ Southerners

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Outness, Discrimination, and Serious Mental Illness Among LGBTQ Southerners

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Author's Statement Page

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Abstract

Purpose: Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) individuals face mental health disparities, and these disparities may be more extreme in southern regions of the United States. This study assesses the role of outness on probable serious mental illness (SMI) among LGBTQ southerners and how discrimination may affect this association.

Methods: This study uses the data from the 2017 LGBT Institute Southern Survey, a cross-sectional convenience sample of 6502 LGBTQ-identified adults living in 14 southern states. Multivariable logistic regression was performed to examine differences between those with and without probable SMI.

Results: A higher proportion of transgender respondents had probable SMI compared to cisgender participants (40.3% vs. 21.8% for cis women and 16.3% for cis men). A higher proportion of bisexual respondents had probable SMI (34.8%) compared to lesbian (17.3%) and gay people (17.1%). Outness was associated with a lower likelihood of probable SMI (OR: .625 (.511, .764), p≤.001), especially when controlling for discrimination in the past 12 months (OR: .615 (.488, .774), p≤.001) and lifetime discrimination (OR: .582 (.428, .791), p=.003). Lifetime discrimination was associated with a higher likelihood of probable SMI (OR: 2.006 (1.367, 2.943), p=.001) as was discrimination experienced in the past 12 months (OR: 1.770 (1.396, 2.244), p≤.001).

Conclusion: These results underscore the importance of the relationships between outness, discrimination and probable serious mental illness among LGBTQ southerners. Policies that address discrimination against sexual minorities should be expanded. Further research on how outness can improve mental health is warranted.

List of Tables/Figures

Chapter I – Introduction

Psychological distress among Lesbian, Gay, Bisexual, Transgender, or Queer (LGBTQ) individuals is higher compared to general population estimates.[1] The National Health Interview Survey from 2013 and 2014 included for the first time a question about sexual orientation. This nationally representative sample provided estimates of health disparities faced by lesbian, gay and bisexual individuals, including serious psychological distress, estimated based on a score of 13 or above on the Kessler 6 scale. The prevalence of serious psychological distress among heterosexual individuals was 3.3% compared to 5.9% among homosexual individuals, 10.7% among bisexual individuals, and 15.3% among those who identified as something else.[1] There has been limited research on the mental health of LGBTQ people in the southern United States despite more extensive health disparities among this particular population in this region.[2,3] Minority Stress Theory suggests that stress associated with minority status due to discrimination and stigma negatively affects mental health.[4] This paper uses Minority Stress Theory as a framework to determine mental health disparities among LGBTQ southerners. Many studies have examined psychological distress among LGBTQ populations, but this paper fills a gap in the literature surrounding LGBTQ southerners. This paper examines outness, lifetime discrimination, discrimination experienced in the past 12 months, and psychological distress among LGBTQ southerners.

Specific aims of the study:

1. To estimate the prevalence of discrimination and probable serious mental illness among LGBTQ southerners

2. To examine the associations between outness, discrimination, and serious mental illness among LGBTQ southerners.

Chapter II- Literature Review

2.1 Epidemiology of Psychological Distress Among LGBTQ Southerners

LGBTQ people experience health disparities across many health issues.[5] Several studies have shown elevated levels of psychological distress among LGBTQ populations compared to the general population.[5–8] Many potential predictors have been examined as mediators or buffers for the relationship between sexual orientation and psychological distress. Among studies that use the K6 scale, these include: HIV,[6] marriage (married people have lower percent SMI,[9,10] although another study found that marriage was not statistically significant in multivariate modeling),[11] internalized homophobia (high levels of internalized homophobia was associated with psychological distress among gay and bisexual men from China),[12] perceived unequal recognition (perceived unequal recognition of marriage was associated with more psychological distress),[11] drug use (people who use more than one drug were more likely to have SMI than people who use "sex drugs"),[13] supportive networks, which can reduce the risk of SMI,[14] oppressive situations (people who experience more oppressive situations have more psychological distress, but self-regulation partially mediates the relationship),[15] and discrimination (although the association between discrimination and psychological distress was buffered among lesbian, gay and bisexual individuals who had higher perceived neighborhood quality).[7]

Many other studies have explored how discrimination may affect mental health and partially account for the mental health disparities seen in the LGBTQ population, particularly in locations that do not have anti-discrimination laws or policies.[16] The South has less social acceptance of

LGBTQ people than other regions in the United States,[3] which could result in greater mental health disparities. The LGB Social and Political Climate Index was created in 2014 to understand social environments where LGB people live.[17] Higher scores indicate greater acceptance. Most of the southern states had below average scores (indicating lower support for LGBTQ communities), which suggests that living environments for people in the South may be more hostile.[17] The social and political climate in the South is not as supportive of equality, which may lead to more discrimination experiences. LGBTQ people living in the South face many health disparities, and mental health is an important factor in overall health.[2]

2.2 The Association Between Discrimination and Psychological Distress

LGBT youth were more likely to face discrimination compared to their non-LGBT counterparts.[18,19] One study using a school-based survey of youth in Boston found that 33.7% of sexual minority youth reported perceived discrimination compared to only 4.3% ($p<.0001$) of heterosexual youth.[18] Similarly, 18.8% of transgender youth reported perceived discrimination compared to 6.4% of cisgender youth.[18] Victimization experienced by lesbian, gay and bisexual youth is more harmful to mental health than victimization experienced by straight youth.[20] Bisexual and gay men experienced more discrimination than bisexual women and lesbians,[21] and men report more discrimination than women.[22] Pansexual individuals and people that identified as an "other" sexual orientation experienced the highest amount of environmental microaggressions in one study of 1177 sexual and gender minority adolescents.[16]

Prior research suggests that discrimination influences the relationships between gender identity, sexual identity, and mental health. A study of older transgender people found that victimization

and stigma explained a large portion of the differences in mental health outcomes between transgender and non-transgender people.[23] One study found that lifetime victimization due to sexual orientation was associated with mental health problems.[24] Victimization in the past six months among a sample of 175 LGBTQ youth and young adults was positively associated with psychological distress.[25] Another study found that perceived discrimination can contribute to emotional distress (measured by depressive symptomology).[18] Victimization based on sexual orientation (hate crimes) caused worse mental health outcomes compared to other types of crimes.[21] One study showed a significant relationship between discrimination and psychological distress among breast cancer survivors (standardized beta=.24, 95% CI (.09-.40).[26] This effect was only significant when accounting for the total effect (direct and indirect). The direct effect was not significant. Discrimination may be moderated by resilience, as there is a present significant effect through resilience (beta= 0.15, 95% CI (0.07–0.25)).[26] Another study's findings indicate that expectations of stigma mediate the association between discrimination and psychological distress and that anticipating stigma could be a root cause for the worse mental health that results from experiencing discrimination.[27] Fear of stigma can be greater in less populated or more rural areas.[2]

The role of discrimination on mental health is not fully understood. A longitudinal study among 14 to 21-year-olds from gay organizations in New York City found that gay-related stress events (arguments with family about sexual orientation, trouble with teachers, classmates, or coworkers, being physically assaulted, etc.) were related to emotional distress under certain circumstances. Only 33% of the correlations were statistically significant. For example, between baseline and six months, gay-related stressful life events were statistically associated with anxiety.[28] The

relationship was not significant at the 12-month follow-up. The lagged correlations between gay-related stress events and discrimination were not significant, although the cross-sectional correlations were significant at the baseline and 6-month follow up.[28] It's possible that negative events were not related to emotional distress because of the social support or coping strategies that were not measured.[28] One cross-sectional survey of adults in a county in Minnesota found that controlling for discrimination in the past 12 months did not significantly reduce the mental health disparities faced by LGBT people.[19] Another study among adolescents found that discrimination was not reported more among gay people compared to heterosexual people, possibly because of resources that reduce feelings of isolation and buffer perceived discrimination.[22] Bisexual or mostly heterosexual people did however report more discrimination than heterosexual people.[22]

2.3 Outness, Discrimination, and Psychological Distress

A study published in 1998 found that the degree of disclosure about one's sexual orientation to family, friends, and coworkers was associated with social support.[29] The study also found that higher levels of outness were related to less anxiety.[29] It's possible that the increased social support afforded to those who are more out helps to improve mental health outcomes.[29]

The way that discrimination and outness affect each other and mental health is not fully understood. It is possible that outness and discrimination have a two-way path. People that are more out are likely to experience more sexual orientation-based discrimination because more people know about their identity,[16,21] which would lead to a positive association between outness and discrimination (with outness predicting discrimination). Alternatively, people that

experience discrimination based on sexual orientation may disclose their sexual orientation to fewer people in the future as a way to limit the discrimination experiences they face. Restricted outness could be a strategy used to prevent discrimination,[27] leading to an inverse relationship between outness and discrimination (with discrimination predicting outness). For example, one study found that using a closed visibility management style (being less out) was associated with more discrimination, possibly because experiencing discrimination leads to LGBTQ people choosing to restrict outness.[30] Another study found that the path from heterosexist discrimination to outness was insignificant.[27] One study of 219 LGB individuals from an online survey proposed a model where outness predicts discrimination, which predicts minority stress, which predicts psychological distress.[31] Among bisexual people, people who were more out at work experienced significantly less workplace discrimination.[31] Perceived discrimination was positively associated with psychological distress.[31] Another study that used two combined community samples of LGB people from a small midwestern city and a medium-sized Northeastern city found a more complicated relationship between outness and discrimination. People who were more out at work experienced less indirect heterosexism (for example assumption of heterosexuality) but more direct heterosexism (for example anti-gay jokes).[32]

It seems that the relationship between outness and discrimination could be different under different circumstances. The authors of one article suggest that the population of breast cancer survivors may experience more stress in the hospital setting when disclosing their sexual orientation to hospital staff.[26] In this study, outness was negatively associated with negative minority identity, indicating that coming out to more people is associated with less internalized homophobia, but the increased stress of disclosing their sexual orientation to hospital staff could

mitigate those positive aspects of outness. The authors also indicated that outness could lead to more discrimination.[26] LGB individuals who disclosed their sexual orientation earlier in life remembered experiencing more victimization, which indicates that outness could lead to discrimination, but this study did not measure when victimization occurred, and it was noted that more recent victimization would impact mental health more strongly.[21] Further research should look at what age discrimination is most impactful.[21]

Results are also mixed surrounding outness' relationship with psychological distress. The majority of research indicates that outness is related to better mental health.[2,21,27,31,33,34] Some studies found that outness was associated with worse mental health.[26] One study found that there was no significant association between outness and depressive symptoms.[35]

A few studies found that outness became negatively associated with psychological distress after controlling for other variables. One study found that among older LGBT people, disclosing one's sexual orientation to more people was associated with worse mental health after controlling for social support.[36] For older people, disclosing their sexual and gender identities may have been less protective than for younger generations who may face less discrimination when coming out.[36] Another study of 192 LGB people found that identity strength mediated the relationship between outness and mental health.[37] In fact, outness was negatively associated with mental health when controlling for identity strength. This negative association is likely present because the benefits of outness are also related to having a strong identity. Discrimination and stigma were likely the causes of the negative association once identity was controlled for.[37] The social circumstances of people who are coming out for the first time affect whether the experience is

positive or negative.[29] Some research suggests that people who have recently come out are not as well off compared to people who have been out longer.[34] Additionally, outness to the world among LGBTQ Asian Americans was shown to be related to less psychological distress, but outness to one's family was not.[38] It's possible that outness to the world can lead to more social support when outness to one's family may or may not.[38]

One study found gender differences in the relationship between outness and depression.[39] Outness was associated with decreased depression among lesbian and bisexual women, but not among gay or bisexual men.[39]

Chapter III- Manuscript

Introduction

LGBTQ (Lesbian, Gay, Bisexual, Transgender, or Queer) people experience health disparities across many health issues.[5] Several studies have shown elevated levels of psychological distress among LGBTQ populations compared to the general population.[5–8] Among studies that use the Kessler 6 psychological distress scale, the percent of the population with serious mental illness (SMI) among LGBTQ people ranged from 5.8%[5] to 49.2%,[13] varying greatly within different subgroups. For example, variations within the LGBTQ umbrella indicate that bisexual people experience more psychological distress than gay and lesbian participants both in the United States[1,5] and in other countries like China[12] and Australia.[40] 49.2% of MSM who use drugs in Chicago[13] and 28% of homeless youth in Atlanta [14] have a probable SMI. Across the literature, the mean Kessler 6 psychological distress score among queer people is between 1.68[7] to 15.44,[15] varying by the sample population. Studies that use a nationally representative sample, such as the National Health Interview Survey, resulted in much more moderate estimates of psychological distress among LGBTQ individuals compared to other types of sampling.

Gender differences exist within the LGBTQ population, with women experiencing greater psychological distress than men in a nationally representative sample of the United States[5] and in a survey of older LGBT older adults.[36] Transgender people from an online survey in Nebraska also experienced more depression than non-transgender individuals.[41] Similar results were seen among transgender older adults from 11 sites across the U.S., but when controlling for resources and risk, this association was reversed.[36]

Minority Stress Theory suggests that stress associated with minority status due to discrimination and stigma negatively affects mental health.[4] One explanation for increased psychological distress among LGBTQ people is the increased exposure to discrimination experiences. Perceived discrimination can contribute to emotional distress (measured by depressive symptomology).[18] One study found that lifetime victimization due to sexual orientation was associated with mental health problems.[24] Other reports indicate that victimization experienced by lesbian, gay and bisexual youth are more harmful to mental health than victimization experienced by straight youth.[20]

Discrimination may partially account for the mental health disparities seen in the LGBTQ population, particularly in locations that do not have anti-discrimination laws or policies.[16] The South has less social acceptance of LGBTQ people than other regions in the United States,[3] which could result in greater mental health disparities. One study of 249 LGBTQ people from the Central Savannah River Area (a small metropolitan area in Georgia and South Carolina) found that 43.8% of participants experienced anxiety and 31.3% reported experiencing discrimination.[2] Discrimination was positively related with anxiety history.[2] Sexual minority stress variables like discrimination and internalized homophobia could be contributing to the mental health disparities faced by LGBTQ southerners.[2]

The way that discrimination and outness affect each other and mental health is not fully understood. People that are more out are likely to experience more sexual orientation-based discrimination because more people know about their identity.[16,21] It's possible that the

relationship between outness and discrimination is more complicated. One study found that people who were more out at work experienced less indirect heterosexism (for example assumption of heterosexuality) but more direct heterosexism (for example anti-gay jokes).[32]

Results are also mixed surrounding outness' relationship with psychological distress. The majority of research indicates that outness is related to better mental health.[2,21,27,31,33,34] One study found that outness was associated with worse mental health,[26] while another study found that there was no significant association between outness and depressive symptoms.[35] The degree of disclosure about one's sexual orientation to family, friends, and coworkers was associated with social support,[29] which indicates that outness could lead to better mental health through increased social support. The current study expands on this research by providing a large sample (6502) of LGBTQ southerners to examine both lifetime discrimination and discrimination experienced in the past 12 months and to better understand the relationship between outness, discrimination, and psychological distress among LGBTQ southerners.

Methods

Study Design

The 2017 Southern Survey is a cross-sectional sample of LGBTQ-identified adults living in 14 southern states (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia). The survey was administered online and resulted in a convenience sample of 6502 participants. The LGBTQ Institute, partnered with Georgia State University and numerous community

organizations, recruited participants through social media, online networks, and specifically Facebook advertisements.

Study variables

Psychological distress. Psychological distress was measured using the Kessler 6 Psychological Distress Scale.[42] Participants were asked six questions about how often they felt six different feelings. The feelings appeared in a list after the initial prompt: "During the past 30 days, how often did you feel… 1) hopeless 2) nervous 3) restless or fidgety 4) so depressed that nothing could cheer you up 5) that everything was an effort 6) worthless?" Responses were a Likert scale: "All of the time," "Most of the time," "Some of the time," "A little of the time," and "None of the time." The Likert scale was coded from 0-4 with 0 being "None of the time," and a sum of the six questions was created, resulting in a variable with a range of scores from 0-24. A K6 score of 13 or higher is considered high risk for a serious mental illness.

Discrimination. Discrimination based on LGBTQ status was measured with nine discrimination questions (see appendix 4 for the list of questions with frequencies). Respondents could indicate whether they had experienced each type of discrimination in the past 12 months, ever, or never. Respondents who indicated they had experienced discrimination in the past 12 months were recoded into a dichotomous variable indicating yes or no. A second dichotomous variable for each of the nine discrimination variables was created for whether participants had experienced that type of discrimination in their lifetime. For both lifetime discrimination and discrimination in the past 12 months, the nine discrimination variables were summed to create two numerical discrimination variables with a range of 0-9. Factor analysis was performed to observe the joint

variation in the nine discrimination variables. All extraction values were between .362 and .566 for the 12-month discrimination variable. The extraction values had a range of .416 to .627 for the lifetime discrimination variable. Reliability analysis was performed to measure consistency across the discrimination variables. The 12-month summary discrimination variable had a Cronbach's alpha of .716 and the lifetime summary discrimination variable's alpha was .764. Both summary discrimination variables were then dichotomized into having experienced no types of discrimination or having experienced one or more types of discrimination.

Outness. Outness was measured by the questions "How many people in each group below know you are [their self-identified sexual orientation or gender identity]" with groups "Immediate family you grew up with (mother, father, sisters, brothers, etc.)," "LGBT friends," and "Straight, non-LGBT friends." Possible answers included: "I have no people like this in my life," "All know that I am," "Most know that I am," "Some know that I am," "None know that I am." The answers were coded with "I have no people like this in my life" and "None know that I am" as 0 and "Some know that I am," "Most know that I am," and "All know that I am" as 1, 2, and 3 respectively. An outness among close family and friends scale was created by summing the answers for each of the three groups. The result was a scale between 0 and 9 with higher numbers indicating outness with more people in their lives. Factor analysis was performed to observe the joint variation in the three outness variables. The extraction values were between .650 and .732. Reliability analysis showed that the Cronbach's alpha was .753. A dichotomous variable was created that split the scale into upper (5-9) and lower halves (0-4).

Demographic characteristics. Sexual identity was measured by the question, "*Would you say you are…"* Responses were: "Heterosexual or straight," "Lesbian," "Gay," "Bisexual," and "Some other sexual identity, please specify." Gender was measured with four categories: Man, Woman, Transgender, and Other. Age was categorized into 10-year groupings. Race/ethnicity, based on self-report had categories, Non-Hispanic white, Black/African American, Hispanic, and Other. Household Income was categorized into five quintiles. Educational attainment was categorized into four groups: High school, GED, or less; Some college or 2-year degree; 4-year degree; and Graduate/ professional/ doctoral degree.

Data Analysis

Chi-square tests were used to asses any significant bivariate differences between those with probable SMI and those without probable SMI by sexual orientation, race/ethnicity, gender, income, educational attainment, age, outness, and discrimination. Correlations between outness, discrimination, and psychological distress were calculated. Multivariable logistic regression was performed to determine the effects of outness on probable serious mental illness while controlling for demographic variables and discrimination. Three regression models were performed. One controlled for lifetime discrimination and demographic variables, another controlled for discrimination experienced in the past 12 months and demographic variables, and the third controlled only for demographic variables.

The length of the sample meant that many people did not finish the survey. Questions that were towards the end of the survey had especially low response rates. Because approximately 30% of the K6 psychological distress data were missing, multiple imputation was performed for all

variables to retain all 6502 observations for the multivariable analysis. Five separate data sets were created with multiply imputed values, and all estimates provided in the multivariable analysis are pooled estimates. It should be noted that results were similar when listwise deletion was performed instead of multiple imputation, although effect sizes were slightly bigger with the data where listwise deletion was performed. All statistical analyses were performed using SPSS.

Results

The majority of respondents were in the younger age categories, with 37% in the 18-29 age range. Respondents were majority women (43.2%) with 34.8% identifying as men, 17.4% as transgender and 4.6% as some other gender. The sample consisted of slightly more gay men (33.1%) than lesbians (24.2%) with a large sample of bisexual people (20.9%) and other sexual orientations (14.9%). Respondents were mostly non-Hispanic white (74.1%) with 6.6% of the sample identifying as Black or African-American and 5.7% identifying as Hispanic. The remaining 6.2% identified as other races or ethnicities. The sample was relatively wealthy and well educated, with 16.8% of the population in the highest fifth quintile of household income and 36% of respondents having a graduate/professional or doctoral degree. Only .74% of the sample (30 individuals) was out to no one. 14.9% had restricted outness (the lower half of the scale). 90.5% of participants had experienced discrimination of some kind in their lifetime due to their LGBTQ status, and 45.7% had experienced discrimination in the past 12 months due to LGBTQ status. 23.8% of respondents had a probable serious mental illness.

Table 1 presents bivariate analyses of selected variables by SMI status. Age is negatively associated with SMI status, with older people having a lower percentage of probable SMI.

Transgender respondents and those who identified as some other gender had higher percentages of probable SMI (40.3% and 39.3% respectively) compared to cisgender participants. Among cisgender people, women experienced more distress than men (21.8% and 16.3% respectively). A higher percentage of bisexual people (34.8%) had probable SMI compared to lesbian (17.3%) and gay people (15.1%), although 'other' sexual orientations had the highest percentage (37.6%). Compared to other races, Black/African American people had the lowest percentage of people with probable SMI (21.0%). Races other than black and white, which would include Asian and Native American people, had the highest percentage of probable SMI (31.2%). Income and educational attainment were negatively associated with SMI status, with higher incomes and higher education associated with lower percentages of probable SMI. People who had experienced discrimination in the past 12 months had higher percentages of SMI (33.1% vs. 16.8% respectively). Similar results were seen among those who experienced discrimination in their lifetime (25.0% vs. 17.6% respectively). A smaller percentage of those who had unrestricted outness had a probable SMI (22.1%) compared to those who had restricted outness (37.6%).

Correlation analysis (Table 2) showed that psychological distress, outness and lifetime discrimination were all significantly correlated at the alpha=.01 level. Psychological distress was more highly correlated with discrimination in the past 12 months (correlation coefficient = .321) than lifetime discrimination (correlation coefficient =.133) or outness among close family and friends (correlation coefficient = -.210). Discrimination in the past 12 months was not significantly correlated with outness.

Logistic regression analysis showed that those who had unrestricted outness had significantly lower likelihood (.582 times the odds (inverse 1.718)) of having a serious mental illness compared to those who had restricted outness when controlling for demographic variables and lifetime discrimination (95% Confidence Interval (CI): (.428, .791)). When controlling for discrimination in the past 12 months, those who had unrestricted outness had .615 times the odds (inverse 1.626) of having a serious mental illness compared to those who had restricted outness (95% CI: (.488, .774)). When only controlling for demographic variables, those who had unrestricted outness had .625 (inverse 1.6) times the odds of having a serious mental illness compared to those who had restricted outness (95% CI: (.511, .764)).

When controlling for demographic characteristics and outness, those who experienced discrimination in the past 12 months had 1.77 times the odds of having a serious mental illness compared to those who did not experience discrimination in the past 12 months (95% CI: (1.396, 2.244)). When controlling for demographic characteristics and outness, those who experienced discrimination in their lifetime had 2.006 times the odds of having a serious mental illness compared to those who did not experience discrimination in the past 12 months (95% CI: (1.367, 2.943)).

Discussion

Mental health is an increasingly important research area as mental health affects physical health and morbidity.[43,44] LGBTQ people have significant mental health needs.[41] The research on mental health in the LGBTQ populations is limited, and research among bisexual and transgender populations is particularly lacking.[45] The present study supports previous research

indicating that LGBTQ people face considerable mental health disparities compared to general population estimates.[5–8] Results show that LGBTQ southerners have a higher prevalence of probable serious mental illness compared to national estimates in the general population (3.5% for 2017).[46] Considering the high educational attainment and income of the participants and the negative association between those variables and probable serious mental illness, it is possible that our estimate of probable serious mental illness among LGBTQ southerners is underestimated. The findings in this paper suggest that the South may be a more difficult place to live compared to other regions of the United States. The LGB Social and Political Climate Index for all of the states where people live in this study have scores at or below average, indicating lower acceptance of LGB people.[17] People living in the south may face living environments that are more hostile,[17] which could exacerbate the mental health disparities faced by LGBTQ southerners.

Consistent with the literature, certain subgroups of the LBGTQ community have worse mental health compared to other groups, namely bisexual people, transgender people and people who identify as "other" sexual orientation and "other" gender. A higher proportion of people in these groups had a probable serious mental illness. This difference could be because bisexual and transgender people are often stigmatized even within the LGBTQ umbrella. Another factor could be the lack of self-acceptance of LGBTQ identity, which can be harmful to mental health.[41]

The high prevalence of probable serious mental illness among LGBTQ populations could be related to higher prevalence of discrimination.[18,20,24] A higher proportion of transgender people experienced discrimination due to LGBTQ status compared to cisgender people, but this was not

true for bisexual people. Despite experiencing less discrimination compared to lesbian and gay respondents, bisexual people had worse mental health, which could be partially explained by outness and related factors such as social support.[33] A larger proportion of transgender people had restricted outness (27.6% compared to 8.3% of cis men and 16.6% of cis women) as did bisexual people (33.3% compared to 5.5% for gay people, 6.8% for lesbian people and 24.0% for other sexual orientations), which can lead to more psychological distress.[33]

Logistic regression analysis showed that having friends and close family that know the sexual orientation or gender identity of the individual can be protective against serious mental illness, although due to the cross-sectional nature of the data, it is impossible to be sure of directionality or causality. Interestingly, when controlling for lifetime discrimination, the association between outness and serious mental illness changed from OR=.625 (.511, .764) to OR=.582 (.428, .791). Although the models cannot be compared directly, and their confidence intervals suggest that the odds ratios may not be significantly different, discrimination may reduce the positive benefits of outness on mental health. Outness seems to promote better mental health through social support[47] while also putting one at risk for discrimination,[16,21,26] which would limit the positive effect of outness. Controlling for discrimination shows the potential for greater mental health gains if discrimination is reduced. When controlling for 12-month discrimination, the effect size of outness on probable serious mental illness increased slightly less than when controlling for lifetime discrimination. This difference could be because lifetime discrimination may have a cumulative effect on mental health.

Inconsistent with the literature, Black/African American LGBTQ southerners experienced less psychological distress compared to other racial/ethnic groups. It is possible that being in the south is protective for Black/African American people because of a larger proportion of Black/African American people in the south compared to other parts of the United States. It could also be that more Black/African American people were living in urban settings where discrimination is less common. There could also be measurement error based on how different racial/ethnic groups perceive and report mental health. The K6 scale was designed to approximate clinical diagnoses of serious mental illness, which can be biased based on race.[48]

There were several limitations of the study. The sample used was a convenience sample and may not be representative of the general LGBTQ population in the south. The online survey format provides convenience to participants but could exclude individuals who do not have a computer or smart phone with internet access. This bias could be one reason the sample has a higher income than the general population. Additionally, all of the measurements were self-reported, which could produce recall bias. It is also possible that because the Kessler 6 measurement scale was designed for a nationally representative sample that the measurements on specific subpopulations like LGBTQ individuals are inaccurate. Lastly, because the data were cross-sectional, causality cannot be assumed.

Future Directions

There is a need for more population-based studies to be able to generalize these findings [26] and compare different regions of the United States. Additionally, further research should strive to make causal connections between outness and psychological distress. Psychological distress and

psychological well-being should be analyzed separately because they can provide different results.[27] Further research should explore how self-acceptance could affect the relationship between discrimination and mental health in LGBTQ populations. Factors that affect the relationship between outness and mental health, such as social support and strong identity, should be explored further to create interventions that capitalize on the benefits of outness.

Collective action could be a way to improve mental health among LGBTQ people who experience discrimination because collective action was found to buffer the relationship between heterosexist discrimination and internalized heterosexism (which negatively affected well-being).[27] Community connectedness was associated with decreased anxiety among southerners.[2]

Due to the role discrimination plays in increasing psychological distress, it will prove important to take measures that reduce discrimination. Individuals who live in states with non-discrimination policies experience fewer environmental microaggressions.[16] Because microaggressions and discrimination can lead to mental health problems and can mitigate some of the health benefits of being out with family and friends,[16] it is important that anti-discrimination policies are universal and extend into workplaces and school settings. Acknowledgement of and education about the presence of LGBTQ people in schools and workplaces could help people feel safe enough to come out as well as reduce discrimination.[33] Sexual orientation protections in school could also serve to reduce bullying and discrimination and subsequently improve mental health.[49] Clinical interventions should consider the benefits of identity formation and coming out.[34] Factors that affect the relationship between outness and

mental health, such as social support and strong identity, should be explored further in order to create interventions that capitalize on the benefits of outness.

Additionally, changes to societal institutions that facilitate the coming out process could help to improve mental health. Greater media coverage that provides LGBTQ role-models for young people could help people feel more comfortable coming out. More representation could also reduce discrimination if people see positive depictions of LGBTQ people in the media.

Conclusion

This study provides a critical look into mental health disparities faced by LGBTQ southerners and the effect that discrimination and outness may have on mental health outcomes. There was a negative association between outness and probable serious mental illness and a positive association between discrimination and probable serious mental illness. The southern United States lacks policies and legislation that support health benefits for same-sex partners, job and housing antidiscrimination, hate crime protection, civil unions, marriages, and adoption.[50] Despite the majority of the population supporting anti-discrimination policies in the south, statewide laws are not in place in most southern states.[51] Reducing discrimination could create environments where people are more likely to disclose their sexual orientation and gender identity, which could, in turn, improve mental health. Comprehensive and well-enforced anti-discrimination laws could serve to reduce mental health disparities.

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Appendices

Table 1. Selected Variables by Probable Serious Mental Illness Status

	No SMI* **		**SMI*** **	
Predictors	**n**	**%**	**n**	**%**
Age*				
18-29	988	62.3%	598	37.7%
30-39	816	76.5%	251	23.5%
40-49	623	83.1%	127	16.9%
50-59	599	89.3%	72	10.7%
60-69	368	90.0%	41	10.0%
70 or over	109	93.2%	8	6.8%
Gender*				
Man	1342	83.7%	261	16.3%
Woman	1561	78.2%	435	21.8%
Trans	475	59.7%	320	40.3%
Other	125	60.7%	81	39.3%
Sexual Orientation*				
Heterosexual	208	84.9%	37	15.1%
Lesbian	964	82.7%	202	17.3%
Gay	1270	82.7%	262	17.1%
Bisexual	617	65.2%	329	34.8%
Other	444	62.4%	267	37.6%
Race/Ethnicity*				
Non-Hispanic white	2888	77%	865	23.0%
Black/African American	229	79.0%	61	21.0%
Hispanic	181	69.3%	80	30.7%

Other	201	68.8%	91	31.2%
Income*				
Low	430	61.4%	270	38.6%
Second	317	74.4%	109	25.6%
Third	463	78.7%	125	21.3%
Fourth	445	84.1%	84	15.9%
Fifth	466	89.4%	55	10.6%
Educational Attainment*				
High school, GED or less	179	61.3%	113	38.7%
Some college/2 year	843	67.8%	401	32.2%
4 year degree	1052	75.8%	336	24.2%
Grad/prof/doctoral	1426	85.3%	246	14.7%
Lifetime Discrimination*				
Yes	2803	75.0%	934	25.0%
No	318	82.4%	68	17.6%
Discrimination 12 Mo.*				
Yes	1265	66.9%	627	33.1%
No	1856	83.2%	375	16.8%
Out to Family and Friends*				
More Out	2795	77.9%	795	22.1%
Restricted Outness	387	64.4%	233	37.6%

*sig <.001 Pearson chi-square

***SMI measured with k6 psychological scale

Table 2. Correlations Between Selected Variables

Variables	Psychological Distress	Lifetime Discrimination	Discrimination In The Past 12 Months	Outness
Psychological Distress	1	--	--	--
Lifetime Discrimination	.133**	1	--	--
Discrimination In The Past 12 Months	.321**	.522**	1	--
Outness	-.210**	.242**	.004	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3. Regression Analysis for Effects of Outness On The Likelihood of Probable Serious Mental Illness

	Model 1		**Model 2**		**Model 3**	
	OR	**p**	**OR**	**p**	**OR**	**p**
Age	.965 (.957, .973)	.000	.965 (.956, .974)	.000	.967 (.960, .975)	.000
Household Income	.819 (.750, .895)	.000	.822 (.748, .903)	.000	.820 (.768, .876)	.000
Educational Attainment	.810 (.745, .880)	.000	.809 (.744, .879)	.000	.821 (.754, .895)	.000
Hispanic Identity	1.372 (.868, 2.168)	.160	1.400 (.890, 2.202)	.134	1.393 (.866, 2.240)	.155
Other Race Identity	1.046 (.673, 1.527)	.828	1.060 (.674, 1.667)	.782	1.038 (.686, 1.571)	.848
Trans or Other Gender Identity	1.615 (1.224, 2.131)	.003	1.592 (1.200, 2.109)	.001	1.639 (1.244, 2.160)	.000
Other Sexual Orientation Identity	1.667 (1.350, 2.058)	.000	1.662 (1.309, 2.110)	.000	1.689 (1.341, 2.128)	.000
Bisexual Identity	1.609 (1.316, 1.968)	.000	1.635 (1.300, 2.057)	.000	1.69 (1.378, 2.075)	.000
Outness	.625 (.511, .764)	.000	.582 (.428, .791)	.003	.615 (.488, .774)	.000
Lifetime Discrimination	--		2.006 (1.367, 2.943)	.001	--	
Discrimination In The Past 12 Months	--		--		1.770 (1.396, 2.244)	.000

-2 Log likelihood	4540.639	4509.5016	4482.6448
Cox & Snell R Square	0.1292	0.1358	0.1416
Nagelkerke R Square	0.1846	0.1936	0.2014

Table 4: Discrimination Questions Used for Discrimination Scale

	% Lifetime	% in the Past 12 Months	n
1) Been threatened or physically attacked	40.5%	6.1%	4210
2) Been subject to slurs or jokes	79.6%	40.5%	4208
3) Received poor service in restaurants, hotels, or other places of business	44.1%	14.9%	4207
4) Been made to feel unwelcome at a place of worship or religious organization	57.4%	15.3%	4205
5) Been treated unfairly by an employer in hiring, pay, or promotion	27.7%	6.4%	4201
6) Been rejected by a friend or family member	66.6%	19.9%	4199
7) Been unfairly stopped, searched, questioned, physically threatened or abused by the police	10.6%	2.0%	4204
8) Been prevented from moving into a neighborhood because the landlord or realtor refused to sell or rent to you a house or apartment	5.9%	1.0%	4207
9) Been denied care or treated unfairly by a healthcare provider	17.9%	5.0%	4207
Discrimination Scales	90.5%	45.7%	4170