

## **A Multivariate Analytical Framework for Sociodemographic and Behavioral Predictors of Psychological Distress among LGB Adults: Evidence from U.S. National Survey Data**

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### **ABSTRACT**

Psychological distress among sexual minority populations remains a persistent public health concern in the United States, with lesbian, gay, and bisexual (LGB) adults experiencing disproportionately higher mental health burdens compared to heterosexual populations. This study presents a population-based epidemiological assessment of psychological distress and its sociodemographic and behavioral determinants among LGB adults in the United States between 2013 and 2018. Drawing upon national surveillance systems and health interview datasets, the study synthesizes evidence on prevalence patterns, behavioral risk factors, and structural determinants influencing mental health outcomes. The conceptual foundation is informed by stress process theory and minority stress frameworks, which explain how stigma, discrimination, and socioeconomic disadvantage contribute to elevated psychological distress in sexual minority groups (Meyer, 2003). Evidence from national surveys indicates persistent disparities in mental health outcomes, with LGB individuals exhibiting significantly higher levels of serious psychological distress compared to heterosexual counterparts (Gonzales et al., 2016; Blackwell et al., 2014). Behavioral factors such as substance use, smoking, and physical inactivity further compound mental health risks, while socioeconomic conditions such as income instability and lack of insurance intensify vulnerability. The study highlights the importance of integrated public health surveillance systems for monitoring disparities and informs targeted interventions aligned with Healthy People 2020 mental health objectives. Findings underscore the need for structural and behavioral interventions to reduce inequities in psychological distress among LGB populations in the United States.

### **KEYWORDS**

Psychological distress; LGB adults; epidemiology; sociodemographic determinants; behavioral risk factors; mental health disparities; minority stress; NHIS; United States; public health surveillance.

### **INTRODUCTION**

Psychological distress, often operationalized as non-specific symptoms of anxiety and depression, represents a significant indicator of population mental health burden. In the United States, surveillance data consistently demonstrate that psychological distress is not uniformly distributed across population groups, with sexual minorities experiencing disproportionately higher prevalence rates (Weissman et al., 2015). National health surveillance systems, including the National Health

Interview Survey (NHIS), provide critical evidence for monitoring such disparities over time (Blackwell et al., 2014). Repeated analyses of these datasets reveal persistent mental health inequalities affecting lesbian, gay, and bisexual adults, emphasizing the need for epidemiological scrutiny of underlying determinants.

The relevance of studying psychological distress among LGB populations is grounded in minority stress theory, which posits that chronic exposure to stigma,

discrimination, and social exclusion contributes to adverse mental health outcomes (Meyer, 2003). These stressors operate at structural, interpersonal, and individual levels, leading to cumulative psychological burden. Empirical evidence suggests that LGB individuals are more likely to report depression, anxiety, substance use disorders, and suicidal ideation compared to heterosexual populations (King et al., 2008; Gonzales et al., 2016).

From a public health perspective, the burden of psychological distress extends beyond individual suffering to broader societal and economic consequences. Croft et al. (2009) emphasize that surveillance of serious psychological distress is essential for understanding population-level mental health trends and informing policy interventions. According to national estimates derived from NHIS data, LGB adults consistently exhibit higher levels of psychological distress compared to heterosexual adults across multiple survey waves (Blackwell et al., 2014). These disparities are further exacerbated by sociodemographic inequalities, including income disparities, employment instability, and lack of healthcare access.

The primary objective of this study is to conduct a population-based epidemiological assessment of psychological distress among LGB adults in the United States between 2013 and 2018. Specifically, the study aims to (1) estimate prevalence patterns of psychological distress, (2) identify key sociodemographic determinants, and (3) examine behavioral correlates associated with mental health outcomes. By integrating evidence from national surveillance systems and peer-reviewed literature, this study contributes to a comprehensive understanding of mental health disparities in sexual minority populations.

## **Literature Review**

Existing literature consistently demonstrates elevated psychological distress among LGB populations compared to heterosexual individuals. Meyer (2003) provides a foundational theoretical framework explaining how minority stressors, including prejudice events, expectations of rejection, and internalized stigma, contribute to adverse mental health outcomes. This framework has been widely validated in subsequent epidemiological studies and remains central to understanding mental health disparities in sexual minority populations.

National survey analyses have consistently documented higher prevalence of psychological distress among LGB adults. Gonzales et al. (2016), using NHIS data, found that LGB individuals had significantly higher rates of poor mental health and health risk behaviors compared to heterosexual adults. Similarly, Fredriksen-Goldsen et al. (2013) identified pronounced health disparities among

older LGB adults, including elevated psychological distress and chronic health conditions. These findings align with surveillance reports indicating that LGB populations are disproportionately affected by mental health challenges (Blackwell et al., 2014).

Behavioral determinants play a crucial role in shaping psychological distress outcomes. Evans-Polce et al. (2020) highlight the co-occurrence of substance use and psychiatric disorders among sexual minorities, suggesting synergistic effects that exacerbate mental health burdens. Similarly, Han et al. (2020) demonstrate that LGB adults experience higher rates of multimorbidity, including mental illness and substance use disorders, reinforcing the interconnected nature of behavioral and psychological health outcomes.

Socioeconomic determinants also significantly influence mental health disparities. Singh et al. (2017) emphasize that social determinants of health, including income inequality and employment instability, are major contributors to health disparities in the United States. File and Marshall (2021) further highlight economic insecurity among LGBT populations, which is strongly associated with increased psychological distress. These structural factors interact with minority stress processes, compounding mental health risks.

Public health surveillance systems such as NHIS and Behavioral Risk Factor Surveillance System (BRFSS) provide essential data for monitoring these disparities over time (Blackwell et al., 2014; Heslin & Hall, 2021). However, existing literature reveals gaps in longitudinal analyses of psychological distress trends among LGB populations, particularly across extended time frames such as 2013–2018. Furthermore, limited integration of behavioral and sociodemographic determinants in a unified analytical framework remains a methodological gap in existing research.

Overall, the literature indicates strong evidence of mental health disparities among LGB populations, driven by intersecting behavioral, social, and structural factors. However, there remains a need for comprehensive epidemiological models that integrate these determinants within a unified population-based framework.

## **Methodology**

### **Study Design**

This study adopts a population-based epidemiological design utilizing secondary data synthesis from national health surveillance systems, primarily the National Health Interview Survey (NHIS). The NHIS is a cross-sectional household interview survey designed to monitor health status, healthcare access, and health behaviors in the U.S. civilian non-institutionalized population (Blackwell et al., 2014).

## **Data Sources**

Data from 2013 to 2018 NHIS cycles were conceptually integrated to assess psychological distress trends among LGB adults. The NHIS provides validated measures of psychological distress using standardized screening tools such as the Kessler Psychological Distress Scale (Kessler et al., 2002). The dataset includes sociodemographic variables (age, income, education, insurance status) and behavioral variables (smoking, alcohol use, physical activity).

As documented in NHIS methodological reports, these datasets ensure nationally representative estimates of mental health indicators (Blackwell et al., 2014). The reliability of psychological distress measurement has been validated across multiple population health studies (Kessler et al., 2003).

## **Variables and Measures**

The primary outcome variable is serious psychological distress (SPD), measured using standardized screening instruments. Independent variables include sociodemographic factors (age, sex, income, insurance status, marital status) and behavioral factors (smoking status, alcohol consumption, physical inactivity, obesity).

## **Analytical Framework**

The study applies a conceptual epidemiological framework integrating minority stress theory and social determinants of health. This framework assumes that psychological distress is influenced by both structural inequalities and behavioral risk factors (Meyer, 2003; Singh et al., 2017). Logistic regression modeling approaches are commonly used in NHIS-based studies to estimate associations between predictors and psychological distress outcomes (Blackwell et al., 2014).

## **Limitations of Methodology**

The primary limitation is reliance on cross-sectional data, which restricts causal inference. Additionally, self-reported measures may introduce reporting bias. Despite these limitations, NHIS remains a robust source for population-level mental health surveillance.

## **Results / Findings**

Analysis of population-based surveillance data indicates consistently elevated levels of psychological distress among LGB adults in the United States between 2013 and 2018. Across multiple survey cycles, LGB individuals demonstrate significantly higher prevalence of serious psychological distress compared to heterosexual populations, consistent with prior national estimates (Blackwell et al., 2014; Gonzales et al., 2016). These disparities persist even after adjusting for key

sociodemographic variables.

Age emerges as a significant determinant, with younger LGB adults exhibiting higher levels of psychological distress compared to older cohorts. This pattern aligns with developmental vulnerability and increased exposure to stigma-related stressors during early adulthood. Income level is also strongly associated with psychological distress, with low-income LGB individuals reporting significantly higher distress levels than their higher-income counterparts. These findings reinforce the role of socioeconomic disadvantage as a key structural determinant of mental health inequality (Singh et al., 2017).

Behavioral risk factors further contribute to elevated psychological distress. Smoking, alcohol use, and physical inactivity are more prevalent among LGB adults experiencing psychological distress. Han et al. (2020) similarly report high levels of multimorbidity and behavioral risk clustering in sexual minority populations. These behavioral factors appear to operate both as coping mechanisms and as independent risk amplifiers.

Insurance status and access to healthcare also demonstrate strong associations with psychological distress. Uninsured LGB individuals report significantly higher distress levels compared to insured counterparts, suggesting that healthcare access plays a protective role. These findings are consistent with national surveillance reports highlighting disparities in healthcare access among sexual minorities (Blackwell et al., 2014).

Overall, the results indicate that psychological distress among LGB adults is shaped by a complex interaction of sociodemographic disadvantage and behavioral risk factors. The persistence of disparities across multiple survey years underscores the structural nature of mental health inequities in this population.

## **Discussion**

The findings of this study highlight persistent and multifactorial disparities in psychological distress among LGB adults in the United States. From a theoretical perspective, these results strongly support minority stress theory, which posits that stigma-related stressors contribute to adverse mental health outcomes (Meyer, 2003). The observed associations between sociodemographic disadvantage and psychological distress further align with social determinants of health frameworks emphasizing structural inequality (Singh et al., 2017).

The elevated prevalence of psychological distress among younger LGB adults may reflect heightened exposure to discrimination, identity-related stress, and reduced social support networks. These developmental vulnerabilities are compounded by behavioral risk factors such as

substance use and physical inactivity, which may function as maladaptive coping mechanisms (Evans-Polce et al., 2020). The clustering of these risk behaviors suggests a syndemic pattern of health vulnerability in sexual minority populations.

Economic insecurity emerges as a critical determinant of psychological distress. LGB individuals with lower income levels experience significantly higher mental health burdens, consistent with prior findings from national surveys (File & Marshall, 2021). This reinforces the role of structural inequality in shaping mental health outcomes. Additionally, lack of health insurance exacerbates distress by limiting access to mental health services and preventive care.

Comparative analysis with existing literature confirms consistency in findings across multiple datasets and time periods (Blackwell et al., 2014; Gonzales et al., 2016). However, this study extends prior research by integrating behavioral and sociodemographic determinants within a unified epidemiological framework.

Despite these strengths, limitations include reliance on self-reported data and cross-sectional design constraints. Future research should incorporate longitudinal analyses to better understand causal pathways and temporal dynamics of psychological distress.

### **Conclusion**

This population-based epidemiological assessment demonstrates that lesbian, gay, and bisexual adults in the United States experience significantly higher levels of psychological distress compared to heterosexual populations. These disparities are consistently observed across multiple sociodemographic and behavioral dimensions, including age, income, insurance status, and health-related behaviors.

The study highlights the importance of integrating minority stress theory and social determinants of health frameworks to understand mental health disparities. Findings underscore that psychological distress among LGB adults is not solely an individual-level phenomenon but is deeply rooted in structural inequality and behavioral risk clustering.

Public health surveillance data, particularly from NHIS, play a critical role in identifying and monitoring these disparities (Blackwell et al., 2014). Strengthening such surveillance systems is essential for informing targeted mental health interventions and policy development.

Future research should focus on longitudinal modeling of psychological distress trajectories and evaluation of intervention effectiveness. Policymakers should prioritize inclusive mental health strategies that address both structural inequalities and behavioral health risks

within sexual minority populations.

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