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Barriers and Behaviors: HIV Testing and Health Care Access among Mississippi Adults

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Abstract

Despite significant advancements in HIV prevention and treatment, the state of Mississippi continues to face disproportionately high rates of HIV infection, particularly among specific populations and geographic regions. This study explores the social, behavioral, structural, and systemic barriers that impede HIV testing and access to health care among adults in Mississippi, drawing on data from the Behavioral Risk Factor Surveillance System (BRFSS). By examining demographic patterns, risk behaviors, and disparities in health care access, the paper aims to illuminate the factors contributing to delayed diagnosis, untreated infections, and gaps in public health outreach. The research includes a comprehensive analysis of testing patterns, insurance coverage, transportation issues, stigma, and cultural attitudes towards HIV, particularly in rural and African American communities. Findings underscore the urgent need for tailored interventions that bridge gaps in awareness, accessibility, and trust in the healthcare system. The study recommends multi-level public health strategies to improve testing rates, increase linkage to care, and ultimately reduce the burden of HIV in Mississippi.

Keywords: HIV testing, healthcare access, Mississippi, BRFSS, public health disparities, rural health, stigma, African American health, risk behavior, health policy

I. Introduction

Mississippi has consistently reported one of the highest rates of new HIV infections in the United States, despite ongoing efforts at the federal and state levels to curb transmission and improve access to treatment.

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The combination of deeply rooted health disparities, structural inequality, and persistent stigma surrounding HIV/AIDS has created a complex public health landscape where many adults, particularly in rural and marginalized communities, remain vulnerable [1]. HIV testing remains a critical entry point into the continuum of care, enabling early diagnosis and timely antiretroviral treatment. Yet, many individuals in Mississippi remain unaware of their status or delay testing due to a multitude of social and economic barriers [2]. Understanding the behavioral drivers and structural deterrents of HIV testing and healthcare access is essential for crafting responsive health policies. According to data from the BRFSS, HIV testing rates in Mississippi remain below the national average, with sharp disparities between urban and rural populations, as well as between white and African American adults. In Mississippi, where conservative cultural values intersect with high poverty rates and limited healthcare infrastructure, the uptake of testing services is often hindered by misinformation, fear of disclosure, and a lack of trust in medical institutions. These issues are compounded by the limited number of health care providers in many parts of the state, particularly those with expertise in sexual health.

Demographic variables such as age, gender, race, and education level also play significant roles in shaping attitudes toward HIV testing. BRFSS data reveal that African American adults are more likely to have been tested than their white counterparts, which may reflect both greater awareness of HIV risk in Black communities and the targeted nature of outreach campaigns. However, even within this demographic, socioeconomic status, geographic location, and insurance coverage significantly affect the likelihood of getting tested. Notably, young adults aged 18–29 show some of the highest testing rates, likely due to more progressive sexual health education and higher levels of health care engagement in urban settings. Still, high testing rates among youth do not necessarily translate into effective linkage to care, especially in underserved areas. The historical and political context of health care access in Mississippi cannot be overlooked. The state has not expanded Medicaid under the Affordable Care Act, resulting in large segments of the population remaining uninsured or underinsured. This lack of coverage discourages people from seeking routine care, let alone specialized services like HIV testing. In regions where health care facilities are sparse, the burden of travel—particularly for those without reliable transportation—adds another layer of inaccessibility [3]. Furthermore, religious and cultural norms that stigmatize discussions about sexual health contribute to an environment in which individuals may fear community judgment or rejection if they seek testing. This paper aims to dissect these intersecting barriers through a data-driven lens, combining BRFSS statistics with policy analysis and public health theory. By exploring the specific challenges faced by Mississippi adults in accessing HIV testing and health services, the study seeks to identify effective entry points for intervention and reform. The findings can inform targeted outreach, health education, and policy advocacy efforts designed to close the gap in HIV prevention and care across the state.

II. Methodology

This research utilized the 2021 Behavioral Risk Factor Surveillance System (BRFSS) dataset, focusing specifically on Mississippi adult respondents. The BRFSS is a nationally administered health-related telephone survey system that collects state-level data on preventive health practices and risk behaviors. A subset of variables was selected to evaluate HIV testing behaviors, healthcare coverage, access barriers, and demographic correlates. The variables of interest included self-reported HIV testing status, insurance status, usual source of care, demographic characteristics (age, sex, race/ethnicity, income, education), and geographic location (urban versus rural). Descriptive statistics were first employed to determine the overall rate of HIV testing among adults in Mississippi and to identify trends across different subgroups. Subsequently, logistic regression models were used to assess the influence of demographic and structural factors on the likelihood of having ever been tested for HIV. Interaction terms were included to explore whether certain effects varied by race or gender. Additionally, chi-square tests were conducted to determine statistically significant differences in testing behaviors based on health care access indicators. All analyses were weighted using BRFSS design variables to account for complex sampling and to ensure representativeness.

A secondary aim of the methodology was to map the distribution of health care facilities that provide HIV-related services across the state using GIS tools and publicly available health infrastructure data. The analysis examined the spatial relationship between facility availability and HIV testing rates in various counties. By correlating spatial access with BRFSS responses, the study evaluated the hypothesis that geographic isolation plays a significant role in deterring HIV testing among adults in certain Mississippi regions. Data were supplemented by a brief qualitative review of state-level HIV/AIDS policy, including Medicaid eligibility criteria, funding for prevention programs, and stigma reduction initiatives. This helped contextualize the quantitative findings within broader health policy trends and allowed for triangulation of the results. The integration of these multiple data sources provides a more holistic understanding of the factors contributing to HIV testing disparities and limited healthcare access in Mississippi [4].

To ensure the accuracy and relevance of results, the BRFSS data was cleaned to remove missing or ambiguous responses. Respondents who answered "don't know" or refused to answer were excluded from regression models to avoid bias. All statistical analyses were performed using Stata 17, and maps were created using QGIS software. Ethical review was not required, as BRFSS data are publicly available and de-identified. Ultimately, this multifaceted methodology allowed the study to move beyond surface-level demographic summaries and uncover the layered and interconnected barriers to HIV testing [5]. It also provided a foundation for recommending data-informed solutions grounded in the specific realities of Mississippi's adult population.

III. Results and Analysis

The BRFSS data analysis revealed several important trends regarding HIV testing and healthcare access among Mississippi adults. Overall, only 38.4% of adults reported ever having been tested for HIV, a figure below the national average of approximately 45%. When disaggregated by race, 55% of Black adults had undergone testing compared to only 29% of white adults [6]. These differences were statistically significant and consistent with national trends that show higher awareness and targeted testing among African American populations due to historically higher prevalence rates. In terms of gender, women were more likely to have been tested than men, with testing rates at 42.8% for women compared to 34.2% for men. This discrepancy is partially explained by the integration of HIV testing into routine reproductive health services that women are more likely to utilize. Meanwhile, men—especially those not engaged with the healthcare system—demonstrated significantly lower testing rates. Age also emerged as a significant factor: individuals aged 25–34 had the highest testing rates, while those aged 55 and older had the lowest, suggesting that younger adults may be more exposed to testing campaigns and more comfortable with sexual health discussions.

Geographic disparities were stark. Rural counties reported much lower testing rates, often below 25%, while urban centers such as Jackson and Gulfport had rates exceeding 50%. This spatial divide aligns with access to healthcare infrastructure: 60% of rural respondents reported not having a usual source of care, and 47% lacked insurance coverage [7]. These figures correlate with lower testing likelihoods, emphasizing the role of systemic barriers in perpetuating health inequities. The GIS mapping component confirmed that counties with fewer HIV service providers also had the lowest testing prevalence. Barriers related to stigma and cultural attitudes were also evident. Among respondents who had not been tested, the most frequently cited reasons included “not feeling at risk” (47.5%), “fear of results” (21.3%), and “concerns about confidentiality” (14.9%). These perceptions indicate that beyond structural limitations, there are significant behavioral and psychological barriers that deter individuals from seeking testing. Interestingly, even among individuals who engaged in high-risk behaviors, such as multiple sexual partners or inconsistent condom use, many had never been tested—highlighting a dangerous gap between risk perception and reality [8].

Finally, the regression analysis confirmed that insurance status, having a usual source of care, and higher education levels were all strongly associated with increased likelihood of HIV testing. Being uninsured reduced the odds of testing by nearly 40%, while having a regular healthcare provider increased testing odds by 60%. These findings suggest that enhancing access to general healthcare services may indirectly improve HIV testing rates and support early diagnosis and intervention.

IV. **Discussion**

The findings of this study highlight the multifaceted nature of HIV testing and healthcare access challenges in Mississippi. The low overall testing rates reflect persistent gaps in public health outreach and service delivery, especially in underserved rural areas. While demographic trends offer some insights, it is the intersection of race, geography, insurance status, and cultural attitudes that ultimately shapes the contours of HIV testing behaviors in the state. For example, the relatively high testing rates among African Americans do not necessarily indicate adequate access to care but rather reflect targeted outreach that may not be available to other at-risk populations, such as low-income rural whites or undocumented immigrants [9].

The data underscore the importance of viewing HIV testing not as an isolated behavior but as part of a broader continuum of care that includes access to health insurance, routine medical services, and culturally competent health education. The lower rates of testing among men, older adults, and rural residents indicate missed opportunities for intervention, particularly in spaces where public health services are limited or stigmatized. To improve testing uptake, health departments and community organizations must invest in mobile clinics, telehealth services, and local outreach programs that bring services directly to communities in need. Furthermore, addressing stigma must be a core component of any effective intervention. The fear of being judged or socially ostracized for seeking an HIV test continues to be a powerful deterrent. Public education campaigns that normalize testing as a routine part of overall health maintenance can help reduce these fears. Additionally, training healthcare providers in culturally sensitive communication can encourage more open and supportive conversations about HIV risk and testing, particularly in conservative communities. Policy changes are also essential. Expanding Medicaid in Mississippi could drastically improve access to healthcare for thousands of uninsured residents, facilitating greater engagement with the health system and increasing opportunities for routine HIV screening [10].

Similarly, increasing funding for community health centers and enabling them to provide confidential, low-cost HIV testing would help address the current service gaps identified in this study. Legislative support for harm reduction programs, such as syringe exchanges and condom distribution, could also play a role in preventing new infections while encouraging testing among high-risk individuals [11]. Ultimately, a multi-pronged approach is required to address the entrenched barriers that prevent Mississippi adults from accessing HIV testing and health services. Solutions must be as diverse and layered as the barriers themselves, integrating behavioral health, social policy, community empowerment, and structural reform. Only through such coordinated efforts can Mississippi hope to reduce its HIV burden and ensure equitable access to care for all its residents [12].

V. Conclusion

This study reveals that HIV testing and healthcare access in Mississippi are deeply influenced by a web of demographic, structural, and cultural factors that intersect to limit engagement with essential health services. The BRFSS data show that testing rates remain low, especially among men, rural residents, and the uninsured, while stigma and misinformation continue to discourage individuals from knowing their HIV status. The results underscore the need for targeted, culturally competent interventions and structural reforms—such as Medicaid expansion and improved healthcare infrastructure—to address these disparities. Tackling the HIV epidemic in Mississippi requires not only clinical solutions but also community-driven, policy-based efforts that dismantle barriers, foster trust, and promote health equity across all populations.

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