Access, Awareness, and Action: HIV Testing Patterns and Health Care Availability in Mississippi

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Abstract

The state of Mississippi has long grappled with disproportionate rates of HIV infection, especially among marginalized populations in rural and socioeconomically disadvantaged regions. This study explores the interrelated themes of access, awareness, and action in the context of HIV testing patterns and healthcare service availability across Mississippi. Using a cross-sectional analysis of Behavioral Risk Factor Surveillance System (BRFSS) data from 2020–2023, we assess the influence of geographic location, race, income, education, and health insurance status on HIV testing rates. The study further integrates qualitative interviews with healthcare providers and public health officials to investigate perceived barriers to testing and care. Results indicate alarming disparities in both testing frequency and healthcare access, with particular deficits noted in the Mississippi Delta and other rural counties. Moreover, the lack of sustained public health education campaigns and under-resourced clinics further hinder effective HIV prevention. These findings highlight the urgent need for targeted interventions that integrate community-based strategies with structural improvements in healthcare delivery systems. The research aims to inform policymakers, healthcare professionals, and advocacy groups seeking to enhance HIV testing rates and reduce health disparities in the Deep South.

Keywords: HIV Testing, Healthcare Access, Mississippi, BRFSS, Public Health Disparities, Rural Health, Awareness Campaigns, Health Equity

I. Introduction

HIV continues to be a pressing public health issue in the United States, with Southern states disproportionately affected. Mississippi, in particular, faces a critical health challenge due to its high prevalence of HIV infections, limited healthcare infrastructure, and significant health

disparities among its population. Despite decades of medical advancement and public health awareness, many regions in Mississippi—especially rural areas and communities of color—remain underserved in terms of HIV prevention services. The complex relationship between access to care, public awareness, and health-seeking behavior must be unpacked to better understand testing patterns and improve the trajectory of HIV management in the state. The issue of HIV in Mississippi cannot be viewed in isolation from broader socioeconomic and demographic factors. Structural barriers, such as poverty, low educational attainment, racial discrimination, and healthcare provider shortages, contribute to disparities in HIV testing and treatment [1]. Many individuals residing in rural or impoverished communities may not have regular access to primary care services, let alone specialized testing facilities. Furthermore, stigma surrounding HIV and limited community outreach exacerbate the problem by discouraging individuals from seeking testing or treatment. The consequences are far-reaching, not only increasing transmission rates but also delaying diagnoses and interventions that could improve health outcomes.

This study was designed to investigate the current patterns of HIV testing in Mississippi, focusing on how demographic variables and healthcare availability affect individual testing behaviors [2]. The interplay between personal health knowledge, local healthcare infrastructure, and socioeconomic status remains an underexplored yet pivotal factor in HIV prevention. Our research synthesizes quantitative data from national and state-level surveys with qualitative accounts from those working in Mississippi's healthcare and public health sectors. By triangulating these sources, we aim to present a comprehensive picture of the challenges and potential solutions surrounding HIV testing in the region. A deeper understanding of Mississippi's healthcare geography is essential to contextualize HIV testing patterns. The state's healthcare infrastructure is deeply divided between urban centers like Jackson and the vast, medically underserved rural areas. Many counties lack even a single infectious disease specialist, and community health centers are often overwhelmed and underfunded. These conditions create a landscape where even individuals who are aware of their HIV risk may face insurmountable obstacles in obtaining testing or treatment. Consequently, HIV may go undetected for years, perpetuating its spread and increasing morbidity and mortality [3].

The research presented in this paper is not merely an academic exercise but a call to action. By identifying gaps in access and awareness, we hope to contribute to a shift in public health policy and community engagement. There is an urgent need to develop region-specific strategies that can close the testing gap and ensure that all Mississippians—regardless of geography or income—have access to timely, confidential, and affordable HIV testing services.

II. Methodology

To explore HIV testing patterns and healthcare access in Mississippi, a mixed-methods approach was employed, combining statistical analysis of secondary datasets with qualitative interviews. Quantitative data was primarily drawn from the Behavioral Risk Factor Surveillance System (BRFSS) for the years 2020 through 2023. This database provides detailed health-related information at the state and county levels, including self-reported HIV testing behavior, health insurance coverage, access to primary care, and demographic information such as age, race, and income level [4]. County-level HIV prevalence data were also collected from the Centers for Disease Control and Prevention (CDC) and the Mississippi State Department of Health. BRFSS data was cleaned and filtered to focus solely on Mississippi respondents aged 18–64, the age group most at risk of new HIV infections. Logistic regression analysis was used to evaluate the likelihood of an individual receiving an HIV test based on independent variables, including income bracket, educational attainment, insurance status, rural versus urban residence, and racial identity. These statistical associations were tested for significance at a 95% confidence interval. Geospatial analysis using GIS tools was also applied to visualize disparities in healthcare access and HIV testing rates across the state [5].

To complement the quantitative data, semi-structured interviews were conducted with 30 healthcare providers, public health officials, and community-based organization (CBO) staff working in various parts of Mississippi. These interviews explored perceived barriers to HIV testing, the impact of public health campaigns, and the role of stigma in patient behavior. Interview transcripts were coded using thematic analysis to identify recurring patterns and insights that might not be evident from numerical data alone. The study ensured ethical considerations by obtaining verbal informed consent from all interview participants and

maintaining strict confidentiality standards. All BRFSS and CDC data were used in compliance with relevant data-sharing agreements and privacy regulations. The combination of numerical data and firsthand narratives allows for a richer understanding of the multifaceted issues influencing HIV testing in the state [6].

While the BRFSS offers an extensive pool of data, it does have limitations, including reliance on self-reported information and a lack of granular data on specific testing sites or healthcare providers. Nonetheless, it remains one of the most comprehensive datasets available for population-level health behavior. Supplementing this with qualitative interviews ensures a balanced and nuanced understanding of the issues at hand. Overall, the methodology employed in this research enables a robust, multi-dimensional analysis of the barriers and enablers of HIV testing in Mississippi. It also positions the findings within both statistical and humanistic contexts, thereby allowing recommendations that are both evidence-based and grounded in real-world experiences.

III. Results and Analysis

The results of this study reveal a stark contrast in HIV testing patterns between different regions, racial groups, and income levels within Mississippi [7]. According to the BRFSS data from 2020 to 2023, only 34.7% of Mississippi respondents aged 18–64 reported ever having received an HIV test. The testing rates were significantly lower in rural counties, with fewer than 20% reporting prior testing in some areas of the Mississippi Delta. In contrast, urban counties such as Hinds and Harrison reported testing rates exceeding 45%. This urban-rural divide was further reinforced by disparities in healthcare access, with over 60% of respondents in rural counties indicating that they lacked a regular primary care provider. Income emerged as a powerful predictor of HIV testing behavior. Individuals with annual incomes under $25,000 were 1.7 times more likely to have never been tested for HIV compared to those earning over $50,000, even after adjusting for insurance status. Lack of health insurance further compounded this trend, with uninsured respondents significantly less likely to report HIV testing. Education was another critical variable—those with less than a high school diploma had among the lowest testing rates in the state [8]. Notably, Black residents were more likely to have received an HIV test compared to White residents,

possibly reflecting higher community-based testing campaigns targeting African American populations.

Thematic analysis of qualitative interviews reinforced these quantitative findings. Healthcare workers in rural counties cited numerous structural barriers to testing, including transportation difficulties, limited clinic hours, and understaffed facilities. Several public health officials pointed to the absence of culturally competent healthcare professionals and the lack of sustained funding for HIV testing outreach programs [9]. One clinic director in Sunflower County noted, “We get one round of funding and then the program is gone the next year. There’s no continuity.” Stigma and misinformation also emerged as recurring themes. Interviewees reported that many patients associated HIV testing with promiscuity or drug use, making them hesitant to seek services, especially in small towns where confidentiality is hard to guarantee. Inadequate sex education in public schools was mentioned as another factor that limited awareness about HIV risks and the importance of testing. Public health campaigns, where they existed, were perceived as too generic and not tailored to local community concerns.

One notable positive finding was the success of mobile HIV testing units in increasing test uptake in underserved regions. These units, often run by nonprofits or CBOs, allowed individuals to receive confidential testing without needing to travel long distances or enter a traditional clinic. Areas with such mobile services showed statistically higher testing rates, suggesting that flexible, community-centered approaches can make a tangible difference in closing the testing gap [10]. Overall, the results point to an ecosystem where structural inequities, insufficient health education, and geographic isolation jointly depress HIV testing rates. However, they also highlight opportunities for intervention, especially through mobile testing services and community partnerships.

IV. Discussion

The disparities observed in HIV testing across Mississippi underscore the urgent need for targeted interventions that address both structural and behavioral determinants of health. The state’s unique demographic and geographic characteristics—ranging from its deeply rural counties to persistent poverty levels and racial health disparities—create a challenging environment for implementing universal HIV testing strategies. Addressing these challenges

requires not just increased funding but a strategic rethinking of how healthcare and public health initiatives are deployed and evaluated. One of the most pressing concerns is the limited availability of healthcare infrastructure in rural areas [11]. The concentration of healthcare providers in urban centers creates a healthcare desert across many parts of Mississippi. Addressing this will require innovative approaches such as expanding the role of nurse practitioners, leveraging telehealth technologies, and incentivizing healthcare professionals to practice in underserved regions. The success of mobile HIV testing units offers a practical template that could be scaled statewide with appropriate support.

Education and awareness remain equally vital. Misconceptions about HIV transmission, testing procedures, and confidentiality continue to deter individuals from seeking care. A comprehensive, culturally appropriate health education campaign could play a pivotal role in dismantling stigma and encouraging proactive health behaviors. These efforts should be community-driven and supported by local leaders to ensure credibility and relevance. Incorporating HIV education into broader health literacy programs might increase effectiveness and reduce perceived stigma. Policy-level interventions must also be prioritized. Medicaid expansion, currently a contentious issue in Mississippi, could significantly enhance healthcare access for low-income residents and improve routine screening rates. Additionally, stable and long-term funding for community-based health initiatives is crucial. As several interviewees noted, the “start-stop” nature of many HIV programs undermines public trust and limits their effectiveness. Public-private partnerships and state-level policy reforms are essential to build sustainable healthcare solutions that can outlast political cycles.

The racial disparity in HIV outcomes—despite higher testing rates among Black residents—points to the need for more nuanced interventions [12]. Testing alone is insufficient if not accompanied by robust linkages to care, follow-up services, and culturally competent counseling. Efforts must be made to ensure that testing is not merely a checkbox but a gateway to comprehensive care. Ultimately, combating HIV in Mississippi will require a coordinated, multi-sectoral response involving healthcare providers, educators, policymakers, and communities themselves. This paper highlights both the gaps and the opportunities within the current system and calls for immediate, informed, and sustained action.

V. Conclusion

This study highlights the complex landscape of HIV testing patterns and healthcare accessibility in Mississippi, emphasizing the interdependence of access, awareness, and action in addressing the state's public health challenges. The analysis reveals significant disparities based on geography, income, education, and race, with rural and impoverished communities suffering the greatest deficits. While individual awareness and targeted testing initiatives show promise, they are insufficient without systemic improvements in healthcare infrastructure and policy. Mobile clinics, culturally sensitive outreach, stable funding, and comprehensive education must all converge to drive meaningful change. Ensuring equitable access to HIV testing and subsequent care is not just a health imperative—it is a moral one that requires the collective commitment of the state and its stakeholders to transform the promise of health equity into a lived reality for all Mississippians.

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