



The Association between Socioeconomic Status and Late HIV Diagnosis among Adults in Urban Settings: A Cross-Sectional Analysis

Mugo Moses H.

School of Natural and Applied Sciences Kampala International University Uganda

ABSTRACT

Late HIV diagnosis remains a significant challenge in urban settings, where disparities in healthcare access and socioeconomic status (SES) contribute to delayed testing and treatment initiation. This article explored the association between SES and late HIV diagnosis among adults in urban environments. Factors such as income, education, and employment status are considered in understanding how SES influences health-seeking behaviors, including the likelihood of seeking timely HIV testing. Lower SES groups often face financial barriers, limited health literacy, and reduced access to healthcare services, which can delay diagnosis until HIV has progressed to more severe stages. The article drew on cross-sectional studies and existing literature to analyze the impact of these socioeconomic factors on the timing of HIV diagnosis and to identify the challenges faced by disadvantaged populations. Findings suggested that individuals from lower socioeconomic backgrounds are more likely to be diagnosed later, highlighting the need for targeted interventions to address these disparities. The methodology utilized in writing this article involved reviewing and synthesizing available research on SES and HIV diagnosis patterns in urban settings, with a particular focus on identifying gaps in healthcare access, stigma, and public health interventions. This review underscored the importance of addressing SES-related barriers in reducing late HIV diagnoses and improving overall health outcomes.

Keywords: Socioeconomic status (SES), Late HIV diagnosis, Urban settings, Health disparities, Healthcare access.

INTRODUCTION

Human Immunodeficiency Virus (HIV) remains a significant global health challenge, with urban areas representing some of the highest concentrations of people living with HIV (PLHIV) [1, 2]. In these settings, late HIV diagnosis remains a critical issue, as it significantly affects the effectiveness of treatment outcomes and contributes to higher morbidity and mortality rates. Early diagnosis and initiation of antiretroviral therapy (ART) are key determinants of better health outcomes, as they prevent the progression of the disease to acquire immunodeficiency syndrome (AIDS) and reduce the risk of onward transmission [3, 4]. Despite the availability of diagnostic testing and treatment options, many individuals in urban settings are diagnosed at later stages of the disease, often with severe immune suppression and associated complications. One of the factors that may contribute to delayed diagnosis is socioeconomic status (SES), which influences health-seeking behaviors, access to healthcare, and knowledge about HIV [5, 6]. Socioeconomic status is commonly associated with various determinants of health, including income, education, and employment, which in turn may affect an individual's likelihood of seeking HIV testing and obtaining timely medical care. In urban settings, where there is a diverse population with varying levels of SES, it is important to explore how these disparities contribute to late HIV diagnoses among adults. This review seeks to explore the relationship between socioeconomic status and the timing of HIV diagnosis among adults living in urban environments. Through a cross-sectional analysis of the available literature, this article investigates the impact of different SES factors such as income, education level, and employment status on the likelihood of being diagnosed with HIV at a later stage of disease. The goal is to highlight the critical role that socioeconomic factors play in shaping HIV diagnosis patterns and to discuss strategies for reducing late diagnoses, particularly among disadvantaged urban populations.

UNDERSTANDING LATE HIV DIAGNOSIS

Late HIV diagnosis refers to the identification of HIV infection at a stage where individuals have already developed significant immune system impairment, characterized by a CD4 count below 350 cells/mm³, or have progressed to AIDS [7, 8]. Late-stage diagnosis is associated with poor health outcomes, including increased mortality rates, higher healthcare costs, and greater challenges in managing opportunistic infections. Additionally, people diagnosed at later stages are at a higher risk of transmitting the virus to others, as they are often unaware of their HIV status and may not consistently engage in preventive practices.

In urban settings, the barriers to early diagnosis may include limited access to healthcare services, lack of awareness or misinformation about HIV, and stigma surrounding HIV testing and treatment. Despite significant advancements in public health interventions, such as expanded access to testing and ART, late HIV diagnosis remains a persistent issue in many urban areas. Research has indicated that certain populations are more likely to experience delayed diagnoses, often due to socioeconomic factors that limit their access to timely testing and healthcare.

SOCIOECONOMIC STATUS AND HIV TESTING BEHAVIORS

Socioeconomic status encompasses various aspects, including income, education, and occupation, all of which influence an individual's behavior toward health and healthcare [9, 10]. In the context of HIV, individuals from lower socioeconomic backgrounds are often at a greater disadvantage when it comes to seeking HIV testing and care. This section explores the different components of SES and how they impact HIV testing behaviors and the likelihood of late diagnosis.

- i. **Income:** Income level plays a significant role in determining access to healthcare services. People with lower incomes may face financial barriers to seeking healthcare, including the cost of testing, treatment, and follow-up care. Additionally, those in low-income groups may not have the flexibility to take time off from work to attend medical appointments or HIV testing clinics, further contributing to delays in diagnosis. Furthermore, individuals in lower-income brackets may be more likely to rely on public health systems, which may have longer wait times, limited resources, and fewer opportunities for preventive care, including HIV testing.

On the other hand, individuals with higher incomes typically have greater access to private healthcare services, which may offer more convenient, comprehensive, and timely HIV testing and diagnosis. Higher income groups are also more likely to have health insurance coverage, which can reduce the financial barriers to HIV care and treatment. As a result, the relationship between income and late HIV diagnosis is significant, with lower-income individuals being at greater risk of being diagnosed late.

- ii. **Education:** Education level is another critical determinant of health behavior, including HIV testing. Research consistently shows that individuals with lower levels of education are less likely to engage in preventive health behaviors such as HIV testing. This may be due to a lack of awareness about the importance of early HIV diagnosis, a lack of health literacy, or misconceptions about HIV transmission and treatment.

Higher education levels, in contrast, often correlate with greater knowledge of HIV and its prevention, leading to more proactive health-seeking behaviors. Educated individuals are more likely to understand the importance of regular testing and are better equipped to navigate the healthcare system to access HIV care and treatment. The lack of education about HIV prevention and testing is especially pronounced in marginalized urban populations, where limited educational opportunities may contribute to poor health outcomes and delayed diagnosis.

- iii. **Employment Status:** Employment status also plays a significant role in health access, as individuals who are employed may have greater access to employer-sponsored health insurance or health benefits that facilitate regular HIV testing and healthcare visits. Those who are unemployed or in unstable employment conditions may lack access to health insurance and may face barriers to seeking healthcare due to financial constraints, inflexible work schedules, and transportation challenges.

Moreover, employment can influence social determinants of health, such as housing stability and living conditions. Employment instability and job insecurity often exacerbate stress, leading individuals to prioritize immediate survival needs over health concerns, including HIV testing. Consequently, those who experience employment insecurity or are in low-wage jobs are more likely to experience delayed HIV diagnoses.

STIGMA AND SOCIAL DETERMINANTS IN URBAN SETTINGS

In urban settings, social stigma surrounding HIV can further complicate access to HIV testing and diagnosis, particularly for individuals from lower socioeconomic backgrounds [11–13]. HIV-related stigma remains a powerful barrier to testing, especially among individuals who fear discrimination or ostracism from their families, workplaces,

and communities. For people living in poverty, the fear of social rejection may be even more pronounced, as they may have fewer social networks or support systems to help them cope with the stigma associated with a positive HIV diagnosis.

In urban areas, individuals from lower socioeconomic backgrounds may also face intersecting forms of stigma, such as racial, gender, or sexual orientation-based discrimination. These forms of social exclusion can discourage people from seeking HIV testing or engaging with the healthcare system, contributing to delays in diagnosis and treatment initiation.

HEALTHCARE ACCESS IN URBAN AREAS

Urban settings are often characterized by complex healthcare infrastructures, with both public and private health systems serving a diverse and dense population [14, 15]. However, the availability of healthcare services is not always evenly distributed across socioeconomic groups. In wealthier neighborhoods, individuals are more likely to access high-quality healthcare services that offer timely HIV testing, education, and treatment. In contrast, individuals from lower socioeconomic backgrounds may be limited to public healthcare facilities that face resource constraints, longer wait times, and less comprehensive HIV care.

Moreover, in many urban settings, the accessibility of healthcare services can be further hindered by issues such as transportation, overcrowded clinics, and healthcare worker shortages. These barriers can delay the time it takes for an individual to receive an HIV diagnosis, leading to a greater likelihood of being diagnosed at a later stage of infection.

THE ROLE OF POLICY IN ADDRESSING LATE HIV DIAGNOSIS

Policy interventions are critical to addressing the disparities in HIV diagnosis that arise from socioeconomic factors [16, 17]. Governments and healthcare organizations need to implement policies that ensure equitable access to HIV testing and treatment for all individuals, regardless of their socioeconomic status. This can include expanding access to free or low-cost HIV testing services, increasing the availability of HIV care in underserved urban areas, and implementing outreach programs aimed at educating at-risk populations about the importance of early diagnosis. In addition, policies that address broader socioeconomic inequalities, such as improving income support, expanding educational opportunities, and increasing employment opportunities for marginalized groups, can have a profound impact on reducing late HIV diagnoses. These policies help create an environment where individuals from all socioeconomic backgrounds can access timely HIV care and receive support for managing their health.

CONCLUSION

The relationship between socioeconomic status and late HIV diagnosis is a complex and multifaceted issue, particularly in urban settings where the population is diverse and access to healthcare services can vary dramatically. Factors such as income, education, and employment status play significant roles in influencing an individual's likelihood of seeking HIV testing and receiving a timely diagnosis. Lower socioeconomic status is strongly associated with delayed HIV diagnosis, as individuals from disadvantaged backgrounds face financial, social, and structural barriers that hinder their ability to access care. Addressing these disparities requires a multifaceted approach that includes improving healthcare access, reducing stigma, and implementing policies that address the social determinants of health. By targeting the root causes of late HIV diagnosis in urban areas, it is possible to reduce the burden of HIV and improve health outcomes for individuals, particularly those from lower socioeconomic backgrounds. Public health interventions that promote education, early testing, and treatment are essential in ensuring that all individuals, regardless of their socioeconomic status, could receive a timely HIV diagnosis and appropriate care.

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