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HIV Status Awareness and Perceptions of HIV Self-Testing among Rural Dwellers in Ibadan, Nigeria

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ABSTRACT

Purpose: Awareness of HIV status remains a critical challenge in sub-Saharan Africa, particularly in rural settings where stigma, limited access to services, and sociocultural barriers restrict testing uptake. HIV self-testing (HIVST) has emerged as a strategy to enhance privacy, autonomy, and early diagnosis; however, community awareness and perceptions of this approach remain underexplored in rural Nigeria. This study assessed the level of HIV status awareness and perceptions of HIV self-testing among rural dwellers in Ibadan, Oyo State.

Methodology: A cross-sectional descriptive quantitative design was employed. A total of 218 adult residents from two rural communities (Ajibode and Omi Adio) were selected using a multistage sampling technique. Data were collected through an interviewer-administered, adapted questionnaire and analyzed using SPSS version 27. Descriptive statistics (Pie charts) were used to summarize findings, and inferential tests were conducted at a significance level of $p < 0.05$.

Findings: Results showed that the majority of respondents were below 40 years (83.5%) and female (71.6%). More than half (58.3%) were unaware of their current HIV status, and 68.8% did not know where to obtain HIV self-testing kits. The overall mean awareness score was 0.73 ± 0.74, with 55.5% categorized as having low awareness. Despite this, perceptions of HIVST were largely favorable; 79.4% agreed that HIV self-testing is a good idea, 77.0% believed it ensures privacy, and 75.2% indicated willingness to seek care after a positive result. The mean perception score was 39.51 ± 6.41, with 53.6% demonstrating positive perceptions. Concerns were expressed regarding the absence of counseling, possible misinterpretation of results, and regulation of test kits.

Unique Contribution to Theory, Policy and Practice: This study uniquely reveals that while rural Ibadan dwellers demonstrate low HIV status awareness, perceptions of self-testing are shaped by nuanced cultural beliefs and accessibility concerns. It advances theoretical understandings of health behaviour in rural contexts, informs policies advocating for culturally sensitive distribution models, and guides nurses in implementing community-based strategies to enhance self-testing uptake.

Keywords: *HIV Self-Testing, HIV Status Awareness, Rural Health, Perceptions, Nigeria*

INTRODUCTION

Background of the Study

Globally, 37.9 million people were living with Human Immunodeficiency Virus (HIV) in 2018, yet only about 75% of people living with HIV were aware of their HIV status[1]. HIV testing remains a critical entry point for HIV prevention and treatment services; however, uptake continues to be limited by fear of stigmatization, confidentiality concerns, and negative experiences with healthcare providers, particularly in sub-Saharan Africa[1,2]. HIV self-testing (HIVST) has emerged as a promising strategy that enhances privacy and autonomy, thereby potentially improving awareness of HIV status among underserved populations[3].

Despite global progress in HIV testing, nearly one in five persons living with HIV remain unaware of their status, with awareness levels substantially lower in West Africa compared to other regions[3]. In rural Nigerian settings, sociocultural norms, low health literacy, and persistent HIV-related stigma further limit awareness of HIV status and shape community perceptions of HIV testing approaches, including HIV self-testing. This study therefore seeks to assess the level of awareness of HIV status and explore perceptions of HIV self-testing among rural dwellers in Ibadan, Oyo State, Nigeria.

Empirical studies across sub-Saharan Africa indicate that awareness of HIV-positive status remains suboptimal, with a substantial proportion of people living with HIV—particularly men, younger individuals, and those from poorer households—remaining unaware of their serostatus despite global targets for universal awareness[4,5,6]. Evidence consistently shows that socioeconomic status, gender, education, and age significantly shape HIV status awareness, while stigma, low risk perception, and limited access to testing services further constrain timely diagnosis[7,8,9]. Studies from Nigeria and other African settings demonstrate that perceptions of HIV self-testing are generally positive, with individuals valuing its privacy, convenience, and autonomy, although anticipated stigma, religious beliefs, and perceived barriers continue to negatively influence attitudes toward testing[10,11]. Overall, the literature suggests that while HIV self-testing is widely perceived as an acceptable strategy for improving HIV status awareness, addressing stigma, misconceptions, and structural barriers is critical to translating positive perceptions into improved awareness outcomes.

Methodology

Study Design and Setting

This study adopted a cross-sectional descriptive quantitative design to assess HIV status awareness and perceptions of HIV self-testing (HIVST) among rural dwellers in Ibadan, Oyo State, Nigeria. The study was conducted in two purposively selected rural communities—Ajibode in Akinyele Local Government Area and Omi Adio in Ido Local Government Area. These communities are predominantly Yoruba-speaking and are characterized by limited access to comprehensive health

information and HIV testing services, making them suitable for assessing awareness and perceptions of HIVST.

Study Population and Sampling

The study population comprised adult rural residents aged 18 years and above who had lived in the selected communities for at least two years and provided informed consent. Individuals who could not communicate in English or Yoruba, were critically ill, had cognitive impairments, or had participated in similar HIV self-testing studies were excluded.

The sample size was determined using Cochran's formula, yielding a minimum of 196 participants, which was adjusted for a 10% non-response rate to a final sample size of 218. A multistage sampling technique was employed. Two rural local government areas were purposively selected, followed by random selection of one rural community from each LGA. Households within each community were stratified into women-, youth-, and men-dominated households. One eligible respondent was randomly selected from each household until the required sample size was attained.

Instrument and Data Collection

Data were collected using an adapted, structured questionnaire derived from the HIV Knowledge Questionnaire (HIV-KQ) and the Perceptions and Beliefs about HIV and Self-Testing (PB-HIV) scale. The instrument consisted of five sections, of which Sections A, B, and E were relevant to this manuscript. Section A assessed socio-demographic characteristics. Section B assessed awareness of HIV status and knowledge of HIV self-testing using yes/no and descriptive items. Section E assessed perceptions of HIV self-testing using a five-point Likert scale. The questionnaire was translated into Yoruba and back-translated to English to ensure semantic equivalence.

Approval for distribution was obtained based on social gatherings or religious settings. Being an interviewer administered questionnaire, research assistants who were trained by the researcher in data collection regarding HIV study, together with the researcher distributed these questionnaires to the participants at the end of the multistage sampling technique. The research assistants were trained by the researcher on the following interview skills: Confidentiality and privacy, language sensitivity, cultural sensitivity, body language awareness, handling emotional reactions, and avoid leading questions**.**

Validity and Reliability

Face and content validity were ensured through expert review and alignment with study objectives. A pilot study conducted among rural dwellers in Egbeda Local Government Area yielded a Cronbach's alpha coefficient greater than 0.70, indicating acceptable reliability.

Data Analysis

Data were entered into Microsoft Excel and analyzed using SPSS version 27. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize variables. Awareness and perception scores were categorized using the mean score as a cutoff. Pearson product–moment correlation was used to examine the relationship between the number of sexual partners and uptake-related awareness variables, while chi-square tests were applied where appropriate. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval was obtained from the UI/UCH Ethical Review Committee. Community consent was secured from the Baales of the selected communities. Written and verbal informed consent were obtained from participants. Confidentiality was ensured through anonymous data collection, voluntary participation, and secure data storage.

Results

Table 1 below shows the sociodemographic characteristics of the 218 respondents who participated in the study. The majority of the participants 182(83.5%) were below 40 years. A larger proportion of the respondents were female 156(71.6%) and largely single 158(72.5%). Regarding education, 111(50.9%) had attained tertiary education, meanwhile the ethnicity of the respondents was dominated by the Yoruba tribe 121 (55.5%).

Regarding previous HIV testing, only 91(41.7%) of the respondents had previously tested for HIV, while 127(58.3%) had not.

Table 1: Sociodemographic Characteristics of Respondents (n = 101)

Variable	Frequency(N)	Percentage (%)
Age		
Below 40 years	182	83.5
40 – 50 years	36	16.5
51 years and above	0	0.0
Gender		
Male	62	28.4
Female	156	71.6
Marital Status		
Single	158	72.5
Married	55	25.2
Divorced	5	2.3
Widow	0	0.0
Level of Education		
Primary	31	14.2
Secondary	76	34.9
Tertiary	111	50.9
Tribe		
Igbo	55	25.3
Yoruba	121	55.5
Hausa	42	19.2
Others	0	0.0
Employment Status		
Employed Full-time	82	37.6
Unemployed/Others	135	61.9
Community		
Ajibode	83	38.1
Omi	135	61.9
Sexual Activity (preceding 6 months)		
Yes	122	56.0
No	96	44.0

Variable	Frequency(N)	Percentage (%)
Number of sexual partners		
1	122	56.0
≥2	96	44.0
Previous HIV test		
Yes	91	41.7
No	127	58.3

Table 2 presents the respondents' awareness about their HIV status. A substantial proportion 127(58.3%) of the respondents were not aware of their current HIV status. Only 68(31.2%) knew where to obtain HIV self-testing kits. A smaller proportion 27(12.4%) became aware of their HIV status through self-testing, while 29(13.3%) learned about their status through routine hospital testing.

Regarding the timing of their awareness, 60(66%) of respondents had learned about their HIV status more than a year ago, while 31(34%) had learned within the past year.

Table 2: Awareness about HIV status among rural dwellers

Awareness about HIV status	Frequency(N)	Percentage(%)
Are you aware of your current HIV status?		
Yes	91	41.7
No	127	58.3
Are you aware of where to get the HIV self-testing kits?		
Yes	68	31.2
No	150	68.8
How did you get to know about your HIV status?		
Self-testing	27	12.4
Routine Hospital Testing	29	13.3
Others	35	16.1
When did you get to know?		
<1year ago	31	34
>1year ago	60	66

Distribution of Awareness about HIV status among rural dwellers

Figure 4.1 shows that majority 121(55.5%) have low level of awareness about HIV status among the rural dwellers of Ajibode in Akinyele local government area and Omi Adio from Ido local government area of Ibadan.

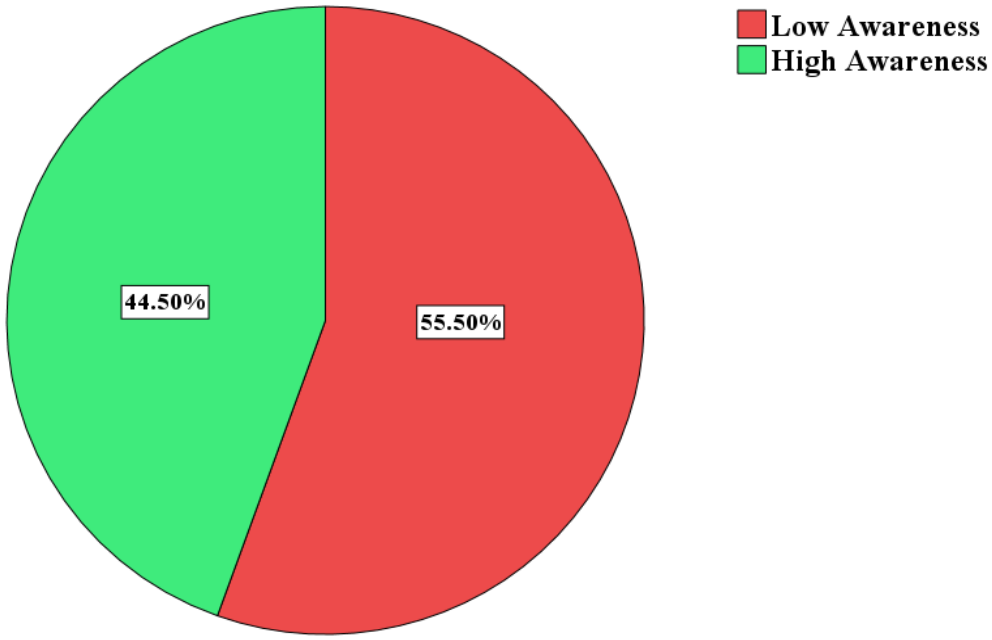

Fig. 1: Distribution of awareness about HIV status among rural dwellers in Ibadan.

Perceptions about HIV self-testing

Table 5 highlights the respondents' perceptions of HIV self-testing. A majority 86(39.4%) agreed that HIV self-testing promotes personal empowerment, while 50(22.9%) agreed. However, a significant portion 65(29.8%) strongly agreed that the absence of a counselor during HIV self-testing increases distress, and 95(43.6%) agreed with this statement.

Regarding the effectiveness and safety of HIV self-testing, 80(36.7%) of respondents strongly agreed that it is a good idea, and 93(42.7%) agreed. Additionally, 87(39.9%) stated that they would seek help from a health facility if their HIV self-test result was positive, while 92(42.2%) agreed that counseling post-testing was important.

Privacy concerns were addressed, with 94(43.1%) agreeing that HIV self-testing ensures privacy, though 62(28.4%) believed that incorrect results could be read or interpreted. Finally, 85(39%) of respondents were concerned that unreliable test kits, if not regulated by the government, could provide inaccurate results.

Table 5: Perceptions about HIV self-testing.

Perceptions	Strongly Agree N(%)	Agree N(%)	Neutral N(%)	Disagree N(%)	Strongly Disagree N(%)
HIV self-testing promotes personal empowerment	50 (22.9%)	86 (39.4%)	45 (20.6%)	31 (14.2%)	6 (2.8%)
The absence of a counselor during HIV self-testing increases distress and the possibility of self-harm after a positive result.	65 (29.8%)	95 (43.6%)	30 (13.8%)	23 (10.6%)	5 (2.3%)
HIV self-testing is a good idea	80 (36.7%)	93 (42.7%)	28 (12.8%)	10 (4.6%)	7 (3.2%)
I would seek help from a health facility if the HIV self-test comes out positive	87 (39.9%)	77 (35.3%)	38 (17.4%)	11 (5.0%)	5 (2.3%)
It is important to get counseling after HIV self-testing	92 (42.2%)	86 (39.4%)	28 (12.8%)	9 (4.1%)	3 (1.4%)
Privacy is ensured in HIV self-testing	94 (43.1%)	74 (33.9%)	31 (14.2%)	15 (6.9%)	4 (1.8%)
Less time is spent in clinics/hospitals by the use of HIV self-testing.	55 (25.2%)	84 (38.5%)	55 (25.2%)	21 (9.6%)	3 (1.4%)
More people can know their status by HIV self-testing	71 (32.6%)	98 (45.0%)	35 (16.1%)	12 (5.5%)	2 (0.9%)
With HIV self-testing, people may read or interpret results incorrectly	62 (28.4%)	99 (45.4%)	29 (13.3%)	20 (9.2%)	8 (3.7%)
If not properly regularized by the government, unreliable test kits could be sold out which would give wrong results	85 (39.0%)	73 (33.5%)	33 (15.1%)	19 (8.7%)	8 (3.7%)

Distribution of Perceptions about HIV self-testing.

Figure 4.2 illustrates the distribution of **Perceptions about HIV self-testing**. The assessment consisted of 12 perception-based questions on table 4.3. Strongly Agree attracted 5 point score,

Agree – 4, Neutral – 3, Disagree – 2, and Strongly Disagree - 1. The results showed a minimum score of 10 and a maximum score of 50, with a mean score of 39.5138 ± 6.4051. Values above the mean were categorized as positive perception, while values below the mean were categorized as negative perception of HIV Self-Testing among rural dwellers in Ibadan. The chart shows that majority (53.6%) of the rural dwellers show positive perceptions of HIV self-testing.

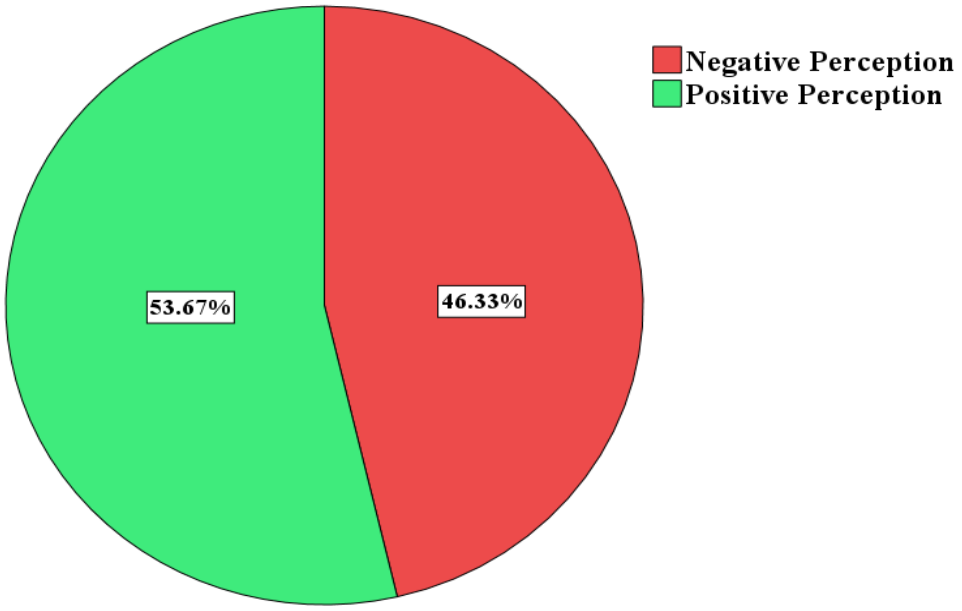

Fig. 2: Distribution of Perceptions about HIV self-testing.

Discussion of Key Findings

The sociodemographic characteristics of the 218 respondents in this study on table 4.1 are appropriate and relevant to its objectives, which focus on HIV self-testing among rural dwellers in Ajibode and Omi Adio, Ibadan. The majority were under 40 years, aligning with existing studies such as Eskeria et al.[12] and Mhango et al.[13], which identified young adults as a key group for HIV prevention. Females made up most of the sample, reflecting trends observed by Iliyasu et al.[14] where males were less likely to engage in HIV testing.

The awareness of HIV status among rural dwellers

The majority of respondents lacked awareness of their current HIV status, and only a minority had ever utilized self-testing kits or learned about their HIV status through routine hospital services. This poor awareness significantly mirrors the persistent gap in HIV status knowledge observed in sub-Saharan Africa, as previously emphasized in studies by Musumari et al.[15] and UNAIDS[16].

The fact that most participants in the present study had never tested or did not know where to access HIV self-testing kits reveals a critical shortfall in the reach of HIV-related health interventions. This observation is consistent with the concerns raised by Tonen-Wolyec et al.[17] and

Vara et al.[18], who stressed that HIV-positive status awareness is foundational for prioritizing effective prevention strategies, especially in rural and underserved populations. Despite the increasing availability of HIV self-testing and pre-exposure prophylaxis, their uptake is evidently limited in the communities examined in Ibadan.

Furthermore, the current study's finding that a considerable number of individuals became aware of their HIV status more than a year ago implies limited follow-up or routine testing behaviour. This echoes the assertion by Woldesenbet et al.[19] that awareness of HIV-positive status is not only essential for starting antiretroviral therapy but must be sustained through regular testing and health system engagement. The implications of outdated awareness or lack of recent testing are severe, as they may delay treatment initiation and inadvertently facilitate ongoing transmission, especially among individuals who remain unaware of their positive status.

Notably, the finding that very few respondents obtained their HIV status through self-testing aligns with reports by Adugna and Worku[9] that contextual factors such as low community literacy levels, insufficient availability of testing kits, and socio-cultural barriers diminish uptake in rural areas. This highlights a need for expanded community-level strategies that not only make testing kits accessible but also demystify their usage through targeted health education programs.

The study also found that most respondents lacked knowledge of where to obtain HIV self-testing kits. This reflects the structural and informational barriers emphasized by Ryan et al.[7] and Musumari et al.[15], who noted that beyond individual attitudes and knowledge, interpersonal and systemic enablers such as household discussions, health communication, and community norms significantly influence testing behaviour. In the absence of these facilitators, individuals in the rural areas of Ibadan are less likely to seek testing or know where to do so.

The perception of HIV self-testing among rural dwellers

The most prominent perception observed in the current study is that HIV self-testing promotes personal empowerment, as expressed by the majority who strongly agreed or agreed with this statement. This perception aligns with findings from Mhango, Dubula-Majola, and Mudadi[11], where a large majority of college-aged respondents in Namibia endorsed HIV self-testing as a tool for personal agency and private decision-making, with many indicating readiness to test at home or with partners. This shared perspective across different African contexts suggests a broader regional acceptance of HIV self-testing as a means of regaining control over one's health, particularly when access to traditional testing facilities may be limited.

In addition to empowerment, the current study also shows that many rural dwellers perceive HIV self-testing as effective and safe, which is consistent with the report by Mhango et al[11]. where a significant number of respondents believed HIV self-testing is a good strategy for improving testing coverage. These findings together reinforce the potential for HIV self-testing to enhance early diagnosis and link individuals to care pathways—particularly in remote or underserved

settings like Ajibode and Omi Adio.

However, despite the generally positive outlook, the emotional and psychological drawbacks associated with self-testing were also noted in the current study. A considerable number of respondents agreed that the absence of a counselor during the process increases emotional distress. This concern is echoed in the study by Yusuf and Ishola[20], which emphasized the role of anticipated stigma and emotional barriers in shaping attitudes toward HIV testing. The implication here is that while self-testing can offer convenience and privacy, the lack of professional support during emotionally intense moments may deter individuals who are fearful of receiving a positive result without immediate psychosocial guidance.

Furthermore, the current study reveals that a portion of respondents question the reliability of test kits and expressed concerns about misinterpretation of results or inaccuracy due to lack of regulation. This skepticism reflects a persistent barrier also identified by Yusuf and Ishola[20] and Mason et al.[21], where perceived barriers such as lack of trust in the process, insufficient knowledge, and regulatory concerns contributed negatively to overall perception. These findings suggest that in rural communities like those studied, public health strategies must prioritize education on the accuracy of kits, provide clear instructions, and ensure proper regulation and validation of kits to foster confidence.

When considering follow-up behaviors, the current study's findings are encouraging: most respondents expressed willingness to seek healthcare support and counseling if their self-test result was positive. This aligns closely with Mhango et al.[13], where a vast majority of respondents stated they would follow up with a health facility for treatment and post-test counseling. This suggests that even in low-resource settings, if the initial testing process is trusted, individuals are willing to engage with formal healthcare systems, which is crucial for achieving continuity in care and meeting UNAIDS targets.

Privacy emerged as a valued feature of self-testing in the current study. Most respondents agreed that HIV self-testing ensures discretion and confidentiality, mirroring perceptions captured in Mason et al.[21], where privacy was seen as a major benefit and motivator for uptake. However, concerns about misuse or misreading of results also highlight the tension between privacy and accuracy. This dilemma points to the need for innovative service delivery models, such as optional tele-counseling, instructional videos, or community-based peer educators, which can preserve confidentiality while offering supportive guidance.

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