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Uptake and factors associated with HIV self-testing among rural dwellers in Ibadan, Nigeria

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Abstract

Background: HIV self-testing (HIVST) is an innovative strategy designed to expand access to HIV testing by allowing individuals to test privately and conveniently, thereby addressing stigma, time constraints, and limited access to facility-based services. Despite its potential, uptake among rural populations in Nigeria remains unclear. This study assessed the uptake of HIV self-testing and factors influencing its utilization among rural dwellers in Ibadan, Oyo State, Nigeria.

Methods: A cross-sectional descriptive quantitative design was employed among 218 adults selected through multistage sampling from Ajibode (Akinyele LGA) and Omi Adio (Ido LGA). Data were collected using an adapted structured questionnaire with established validity and reliability (Cronbach's $\alpha > 0.70$). Analysis was conducted using SPSS version 27. Descriptive statistics summarized uptake levels, while chi-square tests and logistic regression identified associated factors and predictors at a 0.05 level of significance.

Results: Results revealed extremely low uptake of HIVST, with only 7.8% of respondents having ever used a self-testing kit. Overall, 91.3% demonstrated low uptake based on composite scoring. Major barriers included lack of knowledge on kit use, distrust of results, preference for facility-based testing, and poor accessibility. However, 66.5% expressed willingness to self-test if kits were readily available. Education was the only sociodemographic factor significantly associated with uptake ($X^2 = 5.151$, $p = 0.047$). Logistic regression identified significant predictors including planning for the future/health responsibility (AOR = 3.362, $p = 0.006$), encouragement from sexual partners (AOR = 2.545, $p = 0.013$), and peer encouragement (AOR = 2.384, $p = 0.016$). Age, gender, employment status, and number of sexual partners were not significantly associated.

Conclusion: HIV self-testing uptake among rural dwellers in Ibadan is markedly low despite high willingness. Improving health education, strengthening trust, expanding kit accessibility, and leveraging social support networks are essential to enhance HIVST adoption in rural Nigerian settings.

Keywords: *HIV Prevention, Rural community, HIV testing, Nigeria, Health education.*

Introduction

HIV self-testing (HIVST) is an alternative HIV testing approach that allows individuals to collect specimens, perform the test, and interpret results privately, thereby addressing key barriers such as stigma, cost, and time associated with facility-based testing [1]. Although the World Health Organization has reported increasing global adoption of HIVST, implementation and uptake remain disproportionately concentrated in upper-middle- and high-income countries [1]. In low- and middle-income settings, particularly in sub-Saharan Africa, factors influencing the uptake of HIV self-testing remain inadequately understood despite recent efforts to improve affordability and access [2].

HIV testing rates among rural dwellers in Nigeria remain critically low despite their increased vulnerability to HIV infection due to risky sexual practices, gender inequality, and limited access to health services [3]. While HIV self-testing has the potential to expand testing coverage, uptake varies widely across African settings, and evidence on determinants of HIVST use among rural populations in Nigeria is scarce. This study, therefore, aims to examine the uptake of HIV self-testing and identify factors influencing its utilization among rural dwellers in Ibadan, Oyo State, Nigeria.

Empirical evidence from sub-Saharan Africa demonstrates that uptake of HIV self-testing remains variable but generally moderate, with reported levels ranging from 25.4% in South Africa to over 59% in Ethiopia, despite consistently high acceptability and willingness to self-test across populations [4,5]. Studies have shown that uptake of HIVST is significantly influenced by sociodemographic factors, including age, gender, educational attainment, employment status, prior HIV testing experience, and knowledge of HIVST, with younger, more educated, and previously tested individuals being more likely to utilize self-testing services [6,7]. Contextual and structural barriers such as stigma, confidentiality concerns, cost of test kits, limited availability, and weak linkage-to-care mechanisms have also been identified as key determinants limiting uptake, particularly among men and rural populations [8,9]. Additionally, emerging evidence indicates that social context and behavioural factors, including sexual practices, living arrangements, and public health disruptions such as the COVID-19 pandemic, can significantly shape HIVST uptake patterns, underscoring the need for flexible, targeted, and context-specific HIVST delivery strategies [10].

Methods

Study Design and Setting

A cross-sectional descriptive quantitative design was employed to examine the uptake of HIV self-testing and factors influencing its uptake among rural dwellers in Ibadan, Oyo State, Nigeria. The study was conducted in Ajibode (Akinyele LGA) and Omi Adio (Ido LGA), two rural communities characterized by limited access to HIV testing services and health education.

Study Population and Sampling

The study included adult rural residents aged 18 years and above who had resided in the selected communities for a minimum of two years and consented to participate. Exclusion criteria included inability to communicate in English or Yoruba, cognitive impairment, critical illness, and prior participation in similar HIVST studies. Sample size determination followed Cochran's formula, resulting in a final sample of 218 respondents after adjusting for non-response. A multistage sampling technique was utilized, involving purposive selection of LGAs, random selection of rural communities, stratification of households into women, youth, and men clusters, and random selection of one eligible participant per household.

Instrument and Data Collection

Data were collected using an adapted structured questionnaire based on validated HIVST instruments. For this manuscript, Sections A, C, and D of the questionnaire were analyzed. Section C assessed uptake of HIV self-testing, including prior use, frequency of testing, and willingness to self-test. Section D examined factors influencing uptake, such as accessibility, cost, healthcare provider recommendation, religious influence, fear, and educational exposure. Responses were primarily dichotomous (yes/no), with some descriptive items. Trained research assistants administered the questionnaire through face-to-face interviews in private settings to ensure confidentiality and accuracy of responses. Completed questionnaires were reviewed immediately for completeness.

Validity and Reliability

Instrument validity was ensured through expert review and comparison with similar studies. Translation and back-translation procedures were conducted for the Yoruba version. A pilot test conducted among rural residents in Egbeda LGA produced Cronbach's alpha values exceeding 0.70, confirming acceptable internal consistency.

Data Analysis

Data were analyzed using SPSS version 27. Descriptive statistics were used to summarize uptake levels and influencing factors. Uptake scores were categorized into high and low uptake using the mean score as a cut-off. Chi-square tests were used to assess associations between perceptions, awareness, and uptake of HIV self-testing. Logistic regression analysis was conducted to identify predictors of HIVST uptake, with odds ratios reported at a 95% confidence interval. Statistical significance was set at $p < 0.05$.

Data Collection Tool

A standardized, slickHealth Care & Wellness Physical Examination Book was compiled and introduced during the study. It included nine major sections designed for a thorough examination describing various details about demography, clinical treatment behavior, lifestyle medical care, infectious disease practice, and other aspects, such as progress on genital counselling.

Ethical Considerations

Ethical approval was obtained from the UI/UCH Ethical Review Committee, and community entry approval was secured from local leaders. Participation was voluntary, informed consent was obtained, and confidentiality was maintained through anonymous questionnaires and secure data handling. No harm was anticipated or reported during the study.

Results

Sociodemographic Characteristics of the participants

Table 1 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.

As shown in Table 2, a significant majority 201(92.2%) of the respondents had never used an HIV self-testing kit, with only 17(7.8%) having used it once. Among those who had used the self-testing kit, the majority 9((52%) had tested more than 12 months ago, while 5(29%) had used it within the past 6 to 12 months. Only 3(18%) had used the kit within the past 6 months. For those who had not used the HIV self-testing kit, the most common reasons cited were the lack of knowledge on how to use it 40(18.3%), distrust in the results 34(15.6%), and preference for facility-based testing 61(28%). Regarding willingness to self-test if kits were available, 145(66.5%) of the respondents expressed interest in using the kits, while 56(25.7%) would not consider self-testing. The majority (91.3%) of the rural dwellers have low uptake of HIV Self-Testing in Ibadan (Figure 1).

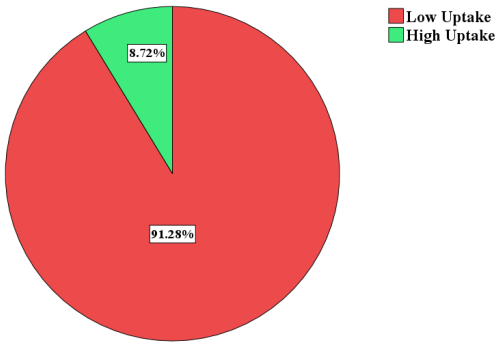

Figure 1. Pie chart showing the distribution of Uptake of HIV Self-Testing among rural dwellers in Ibadan.

Factors influencing the uptake of HIV self-testing among rural dwellers Table 3 presents various factors that may influence the uptake of HIV self-testing. One of the strongest predictors was planning for the future, taking responsibility for one's health, or preparing for marriage. Respondents who identified this motivation were over three times more likely to use HIV self-testing compared with those who did not (AOR = 3.362, p = 0.006). Social influences also demonstrated significant effects. Participants who were encouraged by their sex partners were more than twice as likely to undertake HIV self-testing (AOR = 2.545, p = 0.0127). Likewise, encouragement from friends also significantly increased uptake; individuals encouraged by friends were over twice as likely to test compared with those who did not receive such support (AOR = 2.384, p = 0.016).

Association between the sociodemographic factors (level of education, sex, and employment status) and the Uptake of HIV Self-Testing among rural dwellers in Ibadan. The *chi-square* analysis showed that three of the sociodemographic variables: age (p = 0.260), gender (p = 0.751), and employment status (p = 0.634), were not significantly associated with HIV self-testing uptake. Consequently, the null hypothesis was retained for these variables, indicating that uptake did not differ significantly across the age groups, between males and females, or between employed and unemployed respondents. However, the level of education demonstrated a statistically significant association with HIV self-testing uptake ($X^2 = 5.151$, df = 2, p = 0.047). This implies that education level plays an important

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
Number of sexual partners		
1	122	56.0
$\geq$2	96	44.0
Previous HIV test		
Yes	91	41.7
No	127	58.3

role in influencing whether individuals engage in HIV self-testing.

Association between the number of sexual partners and level of Uptake of HIV Self-testing The Chi-square test produced a value of 1.622 with 1 degree of freedom and a p-value of 0.203. This p-value is above the 0.05 significance level, indicating no statistically significant association. Therefore, the null hypothesis is retained, suggesting that the number of sexual partners does not significantly affect the likelihood of engaging in HIV self-testing among rural dwellers. In terms of distribution, 114 respondents with only one sexual partner reported high uptake, compared to 85 among those with two or more partners. Low uptake was recorded for 8 individuals with one partner and 11 with multiple partners. The difference in uptake across groups is not substantial enough to indicate a meaningful association, highlighting that sexual behavior alone may not predict testing behaviors in this population.

Discussion of Key Findings

The sociodemographic characteristics 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 of some authors [5],[10], which identified young adults as a key group for HIV prevention. Females made up most of the sample, reflecting trends observed by an author [6] where males were less likely to engage in HIV testing. The results revealed a

Table 2. Uptake of HIV Self-Testing among rural dwellers

Uptake of HIV	Frequency(N)	Percentage(%)
Have you ever used an HIV self-testing kit?		
Yes	17	7.8
No	201	92.2
If yes, when was the last time you used an HIV self-testing kit?		
Less than 6 months ago	3	18
6-12 months ago	5	29
More than 12 months ago	9	52
What is the number of times you ever tested for HIV?		
1	2	12
2	6	35
3	4	23
$\geq$4	5	29
If no, what are the reasons for not using an HIV self-testing kit?		
I do not know how to use it	40	18.3
I do not trust the result	5	2.3
I prefer facility-based testing	34	15.6
Fear of a positive result	6	2.8
Kit is not available	61	28.0
Cost is too high	8	3.7
Other	47	21.6
Are you willing to self-test if kits are made available?		
Yes	145	66.5
No	56	25.7

worrying trend of extremely low engagement with this vital public health tool. Despite global efforts and national policies aimed at promoting self-testing as a convenient, confidential, and scalable approach to increasing HIV awareness and control, the rural population in these areas has shown minimal adoption. The vast majority of the respondents in the present study had never used a self-testing kit, which reflects the findings of an author [8], who also observed low uptake of Human Immunodeficiency Virus self-testing among rural and underserved populations in sub-Saharan Africa. However, while it was noted [8] that a notable proportion of participants had at least heard about self-testing, the current study suggests even greater levels of detachment, not only in use but also in general knowledge, regarding Human Immunodeficiency Virus self-testing procedures, tools, and access points. Among those who had used self-testing kits in this study, the majority had done so more than a year ago, with only a few reporting recent use. This aligns with findings from an author [4], who acknowledged that even among populations with access to self-testing kits, regular and consistent use is often low. However, unlike the study in South Africa, where the preference tilted strongly in favor of self-testing, respondents in rural Ibadan expressed distrust in the results of the kits and a preference for facility-based testing. This contrasts sharply with the findings by some authors [11], [12], who suggested that HIV self-testing could effectively decentralize HIV services, increase participation, and reduce testing-related stigma, especially in hard-to-reach communities. The reasons cited by the respondents for not engaging in HIV self-testing, such as lack of knowledge on how to use the kits, fear of inaccurate results, and general preference for clinic-based testing, underscore structural and informational gaps in public health communication and service delivery in rural Nigeria. These barriers align with those highlighted by an author [13], who emphasized that successful uptake of Human Immunodeficiency Virus self-testing requires not only availability but also culturally sensitive health education and user support mechanisms. Interestingly, the present study shows that a large proportion of respondents are willing to self-test if the kits become more readily available. This reflects similar findings by an author [14] and [8], who reported that even in settings with low current uptake, there exists a latent willingness among individuals to adopt self-testing if bar-

Table 3. Logistic Regression showing factors influencing the uptake of HIV self-testing among rural dwellers

Variables	Items	Frequency (N = 218) ƒ(%)	Crude Odd ratio	CI		Adjusted Odd ratio	P-value
				Lower CI	Upper CI		
Were you encouraged by your religious gathering?	Yes No	64(29.4) 154(70.6)	1.857	.379	3.616	1.170	.785
Was accessibility to HIV self-testing kits a factor?	Yes No	111(50.9) 107(49.1)	1.361	.311	3.494	1.042	.946
Did advice from a healthcare provider influence your decision?	Yes No	94(43.1) 124(56.9)	2.446	.430	4.484	1.389	.050
Was fear of possible exposure to HIV a factor?	Yes No	67(30.7) 151(69.3)	2.188	.468	4.379	1.432	.529
Did planning for the future, taking charge of your health, or getting married influence your decision?	Yes No	86(39.4) 132(60.6)	3.740	.933	12.117	3.362	.006
Were you encouraged by your sex partner?	Yes No	44(20.2) 174(79.8)	3.293	.766	8.464	2.545	.0127
Were you encouraged by your friends?	Yes No	57(26.1) 161(73.9)	3.593	.708	8.019	2.384	.016
Was employment or travel a reason for uptake?	Yes No	37(17.0) 181(83.0)	1.864	.108	2.060	.472	.318
Did the need to donate blood influence your decision?	Yes No	41(18.8) 177(81.2)	2.163	.348	4.585	1.262	.723
Was curiosity a factor?	Yes No	80(36.7) 138(63.3)	2.591	.560	6.089	1.846	.314
Was the cost of HIV self-testing kits a factor?	Yes No	69(31.7) 149(68.3)	.996	.111	1.383	.392	.145
Were educational efforts a reason for your decision?	Yes No	71(32.6) 145(66.5)	1.989	.169	2.282	.622	.474

Table 4. Association between the sociodemographic factors (level of education, sex, and employment status) and the Uptake of HIV Self-Testing

Socio-demographic factors	Level of Upatake		Chi-Square	df	p-value	Remark
	Low uptake	High uptake				
Age <20 20-30 30-40 >40years	47 89 28 35	3 10 5 1	4.016	3	0.260	Not Significant
Gender Male Female	56 143	6 13	0.101	1	0.751	Not Significant
Education Primary Secondary Tertiary	30 65 104	1 11 7	5.151	2	0.047	Significant
Employment Employed Unemployed	73 126	9 10	0.912	1	0.634	Not Significant

Table 5. Chi-square cross tabulation between number of sexual partners and Uptake of HIV Self-Testing

Number of sexual partners	**Level of Upatake**		Chi-square	df	p-value	Remark
	High Uptake	Low Uptake				
1	114	8	1.622	1	0.203	Not Significant
2	85	11				
Total	199	19				

riers such as cost, access, and trust can be addressed. The willingness in the current study population suggests untapped potential for future interventions and signals that strategic investment in kit distribution and health literacy campaigns may yield meaningful improvements. Moreover, the decline in recent usage of self-testing kits observed in this study may also find partial explanation in the broader patterns seen during the COVID-19 pandemic, as described by an author [10]. Their study noted that Human Immunodeficiency Virus self-testing uptake decreased among vulnerable groups during the pandemic, due to limited outreach, movement restrictions, and shifting health priorities. While the current study does not directly attribute the decline in recent use to pandemic-related factors, the timing of the last testing and the drop-off in recent engagement suggest that similar disruptions may have occurred in the Ibadan context as well. Another critical implication of the current findings is the role of trust in health technologies. The significant proportion of participants who do not trust the self-test results reveals a psychological and systemic barrier that extends beyond physical accessibility. This aligns with broader findings in the literature where preferences were found for supervised or semi-supervised HIV self-testing in many communities due to uncertainty and fear associated with handling medical results independently [15]. Therefore, in addition to distribution, effective uptake in Ibadan and similar contexts will likely depend on models that include counseling, community-based demonstration, and peer engagement. Furthermore, the current preference for facility-based testing, despite the greater convenience of self-testing, illustrates the deep-rooted belief in traditional healthcare structures. While self-testing is positioned globally as a tool for empowerment and privacy, in contexts where formal healthcare interactions are considered more legitimate, the shift to self-directed testing may require greater cultural adaptation and health system endorsement [16]. Taken together, these findings signal that while global trends show promise in Human Immunodeficiency Virus self-testing as a transformative tool, the Ibadan context illustrates that uptake remains highly conditional on local awareness, health beliefs, social trust, and the presence of user support systems. This calls for a differentiated approach to intervention planning. It is not enough to simply distribute self-testing kits; the strategies must also include training programs, trust-building efforts, and community-level sensitization campaigns that demystify the process and address the specific psychological and cultural concerns raised by rural residents. The prominence of accessibility in the present study echoes the findings of some authors [17], who identified limited access to self-test kits as a major barrier to uptake among men in Nairobi. Similarly, in Northwest Ethiopia it was noticed that prior urban residence and higher educational attainment, both proxies for better access to health resources, were significantly associated with increased Human Immunodeficiency Virus self-testing uptake [15]. This convergence underscores that physical access and logistical convenience are foundational prerequisites for scaling up self-testing, particularly in geographically isolated or underserved communities like Ajibode and Omi Adio. Healthcare provider encouragement also emerged as a significant facilitator in the current study. This observation aligns with previous work of an author [18], who noted that participants often cited health reasons and provider advice as motivating factors for testing. Such encouragement not only validates self-testing as a medically acceptable practice but also helps alleviate doubts about its reliability. In a context where distrust of the results of self-testing kits was previously reported by respondents, endorsement by trusted medical personnel becomes a powerful enabling factor. Religious encouragement was also identified as a modest, yet notable, influence on uptake. This finding complements an author [23], who emphasized the role of faith-based communities as "nurturers" in promoting Human Immunodeficiency Virus testing behaviors. The implication is that religious leaders and institutions could serve as effective partners in disseminating accurate information and normalizing HIV self-testing, especially in conservative rural settings where stigma may still prevail. Educational efforts, such as awareness campaigns and instructional support, were also recognized by respondents as influencing uptake. This agrees with the findings of some authors [19] [20], who

asserted that individuals with higher levels of education are more likely to engage in HIV testing, owing to their ability to distinguish between facts and myths surrounding Human Immunodeficiency Virus. However, the relatively low influence attributed to education in the current study may reflect persistent gaps in health literacy, pointing to a need for more localized and culturally sensitive educational interventions. Cost was also cited as a factor, though not the most significant. This nuance parallels findings from a study by an author [6], where only a small fraction of respondents identified cost as a barrier. However, it is important to consider that while cost may not be the primary obstacle for some, its presence compounds other barriers, especially in communities with widespread poverty and limited access to subsidized healthcare. Social influence, particularly from sexual partners and peers, was less frequently cited in the current study. This is in contrast to a study by an author [23], who found peer support and family influence to be major "nurturers" of Human Immunodeficiency Virus self-testing uptake among Nigerian youths. The lower influence observed in this study might be attributed to the conservative social environment in rural Ibadan, where discussions about HIV and sexual health remain taboo. This highlights a cultural gap in social health communication that must be bridged through sensitization and trust-building strategies. Fear of possible HIV exposure was another motivating factor identified by respondents, supporting previous research by an author [21] that underscored the role of perceived risk in motivating early testing behaviors. However, fear operates dually; it can drive testing in some while deterring it in others due to stigma or fear of identity change, as noted by an author [20]. Therefore, while fear may spur curiosity and prompt action among a subset of individuals, broader public health messaging must shift the emotional narrative toward empowerment, rather than dread. The current findings also reinforce demographic trends seen in past studies. For instance, some authors [6] [19] noted that males and unmarried individuals, particularly the younger demographic, tend to show lower testing rates despite having a high risk of exposure. While the present study did not disaggregate findings by gender or age group, the identified barriers, such as lack of encouragement, cost, and misinformation, align with those disproportionately affecting these groups in prior research. The study investigated whether sociodemographic factors influenced HIV self-testing. The regression analysis showed that only education level had a statistically significant association with uptake. Individuals with higher education were more likely to engage in self-testing, aligning with some authors [5] [19], who demonstrated that education enhances health literacy and proactive health behaviors. Conversely, age, sex, and employment status were not significantly associated, which differs from findings in studies by some author [6] [18], where employment and younger age groups were strong predictors. The lack of significance here could suggest cultural or community-level factors that moderate the influence of these demographics in the Ibadan context.

Association between number of sexual partners and HIV self-testing uptake

The finding diverges from the assumptions in a study by an author [22], who linked high-risk sexual behaviors with a higher likelihood of HIV exposure and testing. It also contradicts studies that suggest risk perception, often influenced by multiple sexual partners, can motivate testing. The lack of significance here may point to a low-risk perception or normalization of multiple partnerships in rural communities, as noted by an author [24], where marital and cultural norms affect sexual behaviors and attitudes toward HIV. Education plausibly operates as an upstream enabler that raises health literacy, procedural confidence, and navigation skills, thereby lowering the practical and psychological frictions of self-testing; its effect can also subsume or mediate the apparent influence of other demographics. If better-educated participants are also more exposed to health information, digitally connected, or familiar with pharmacies and community programs, their education may capture these advantages in the model, leaving age, sex, and employment status statistically muted. A second possibility is reduced between-group variability: if kit access and messaging were broadly available across the study communities, program equity may have compressed differences by age and sex. Measurement choices can matter as well, coarse categories for age or employment (e.g., employed vs. unemployed without distinguishing informal work, students, or underemployment) and limited sample size reduce power to detect effects and can mask curvilinear or interaction patterns (for example, younger age predicting uptake only among those with secondary education or higher). Finally, local cultural norms in Ibadan—such as partner or peer influence cutting across age/sex lines, or widespread informal employment that weakens the usual “employment → access” pathway, may moderate associations observed elsewhere. Programmatically, the implication is to make education-sensitive enablement the primary lever. Interventions should tailor materials to low-literacy audiences: pictorial instructions, short vernacular video walk-throughs, and community health worker demonstrations that build

self-efficacy. Clear next-step pathways for reactive results (where to go, what to expect) can further reduce cognitive load. Because age and sex did not differentiate behavior here, broad, non-stigmatizing distribution through universal touch points such as the markets, religious gatherings open to all genders and ages, transport hubs, and pharmacies may be more efficient than narrowly targeting youth or men/women. At the same time, education can be paired with relational cues shown elsewhere in your analysis to matter (partner/friend/provider prompts), ensuring that knowledge translates into action. For monitoring, track behavior-proximal indicators (confidence in performing the test, knowledge of where to get a kit today) alongside education level to identify and close gaps.

Conclusion

This study provides empirical evidence of extremely low uptake of HIV self-testing among rural dwellers in Ajibode and Omi Adio communities in Ibadan, despite a relatively high willingness to use HIV self-testing kits if they are made available. The findings reveal a substantial gap between the potential of HIV self-testing as a public health innovation and its actual utilization in rural Nigerian settings. Key barriers to uptake included limited knowledge on how to use the kits, distrust in test results, preference for facility-based testing, and poor accessibility. Education emerged as the only sociodemographic factor significantly associated with HIV self-testing uptake, underscoring the central role of health literacy in enabling individuals to adopt self-directed health technologies. Social and motivational factors—such as planning for the future, encouragement from sexual partners and friends, and healthcare provider advice—were significant predictors of uptake, highlighting the importance of interpersonal and community-level influences. Conversely, age, gender, employment status, and number of sexual partners were not significantly associated with uptake, suggesting that contextual and structural factors may outweigh individual risk behaviors in shaping HIV testing decisions in this population. Overall, the findings suggest that while HIV self-testing holds promise for expanding HIV testing coverage in rural communities, its effectiveness will remain limited without deliberate efforts to improve access, build trust, strengthen health education, and integrate social support mechanisms. These results contribute to the growing body of public health evidence emphasizing the need for context-specific strategies to optimize HIV self-testing implementation in low-resource, rural settings.

Recommendations and Implications of Findings

The findings of this study have important implications for public health practice, policy, nursing, and future research. First, there is a critical need to strengthen community-based education and sensitization on HIV self-testing, with a focus on improving procedural knowledge, addressing misconceptions about test accuracy, and clarifying linkage-to-care pathways following a reactive result. Educational interventions should be tailored to individuals with lower educational attainment through the use of pictorial instructions, demonstrations, and culturally appropriate messages delivered in local languages. For public health programming, improving the physical availability and affordability of HIV self-testing kits in rural communities is essential. Distribution strategies should leverage existing community structures such as primary healthcare centers, pharmacies, markets, religious institutions, and community outreach programs to ensure equitable access. Given the significant influence of healthcare provider encouragement, training health workers—particularly nurses and community health extension workers—to actively promote and demonstrate HIV self-testing is strongly recommended. Their endorsement can enhance trust, normalize self-testing, and bridge the gap between self-testing and formal healthcare services. The study also underscores the importance of social and relational influences. Interventions should incorporate partner-, peer-, and community-led approaches that encourage dialogue around HIV testing and reduce stigma. Engaging community leaders and faith-based organizations as advocates may further enhance acceptance and uptake in conservative rural contexts. In terms of nursing practice and education, the findings highlight the need to integrate HIV self-testing education, counseling skills, and community engagement strategies into nursing curricula and continuing professional development. Nurses are to serve as educators, facilitators, and linkage agents, ensuring that individuals who self-test are supported throughout the testing and care continuum. From a policy perspective, stakeholders should prioritize the inclusion of HIV self-testing within national and state-level HIV prevention strategies, with clear guidelines on community distribution, quality assurance, and linkage-to-care mechanisms. Policies should also address trust-building measures, including public validation of HIV self-testing accuracy and safety. Finally, future research is recommended to explore qualitative perspectives on trust, stigma, and decision-making around HIV self-testing in rural populations, as well as intervention studies assessing the effectiveness of education-focused and community-driven HIV self-

testing models. Longitudinal and mixed-methods studies could further elucidate how willingness translates into sustained uptake over time. Collectively, these actions can enhance the role of HIV self-testing as a scalable and acceptable tool for improving HIV testing coverage and advancing HIV prevention goals in rural Nigeria and similar settings.

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