



American Journal of Medical Science and Innovation (AJMSI)

ISSN: 2836-8509 (ONLINE)

VOLUME 4 ISSUE 2 (2025)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

HIV Testing Uptake: When Testers Are Not Tested – Implications for Reaching the First 95

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Article Information

Received: September 01, 2025

Accepted: October 10, 2025

Published: November 04, 2025

Keywords

*HIV Testing Services, HIV
Multi-Role Competences,
UNAIDS 95-95-95*

ABSTRACT

Achieving the first UNAIDS 95-95-95 target requires optimizing provider-initiated HIV testing and counselling (PITC). Limited attention has been given to how HIV Testing Services (HTS) providers' own testing practices influence their ability to convince clients to test. This study assessed HIV testing habits of HIV Testing Services (HTS) providers in Ondo and Ekiti States, Nigeria, and their association with client uptake. A cross-sectional survey was conducted across 200 HTS centres, enrolling 786 active counsellors, testers, or dual-role providers. A structured questionnaire captured socio-demographic data, role, HIV knowledge score, and self-reported recency of HIV testing. Provider activities were observed over three months to document client uptake rates. Descriptive statistics, chi-square tests, and multivariable logistic regression were applied. Only 23% of providers had tested within the last 6 months; 11% had never tested. Testers were more likely to have tested recently (53%) compared to counsellors (8%). Counsellors who tested recently achieved higher client uptake (87%) than those who tested >12 months ago (42%) or never (12%). Independent predictors of client uptake included tertiary education (OR=1.91; 95% CI: 1.44–2.54), being a tester/dual-role provider (OR=2.41; 95% CI: 1.58–3.69), higher knowledge score (OR=3.06; 95% CI: 2.07–4.52), and recent self-testing (OR=2.59; 95% CI: 1.70–3.95). Age was inversely associated (OR = 0.89 per year), and males had slightly higher odds (OR = 1.20). Provider-side factors, especially personal HIV testing behaviour, knowledge, education, and role, strongly influence client uptake. Normalizing regular provider self-testing, enhancing knowledge, and promoting multi-role competency may substantially improve HIV testing coverage, advancing progress toward Nigeria's 95-95-95 targets.

INTRODUCTION

HIV remains a major public health challenge globally, particularly in sub-Saharan Africa (Moyo *et al.*, 2023). In Nigeria, around 1.9 million individuals were living with HIV as of 2020 (Bassey & Miteu, 2023), yet fewer than one-third know their status (McClarty *et al.*, 2024). The UNAIDS 95-95-95 targets require aggressive strategies to improve testing coverage (Frescura *et al.*, 2022). However, for this goal ramping up HIV testing and understating barriers is required (Parikh *et al.*, 2025; Ogunnusi *et al.*, 2024).

Healthcare providers, especially HIV Testing Services (HTS) counsellors and testers, are central to these efforts. While a lot of work has been done on various factors influencing service uptake for reproductive health services (Mshweshwe-Pakela *et al.*, 2022; Mavodza *et al.*, 2021; Mannoh *et al.*, 2022). However, limited attention has been given to providers' own HIV testing practices and how these may affect their ability to encourage client testing. This study evaluates HIV testing uptake among HTS providers in Ekiti and Ondo States and examines its association with client uptake.

MATERIALS AND METHODS

Study Area

The study was conducted in Ondo and Ekiti States,

southwest Nigeria. Recent studies documented HIV prevalence at 2.3% and 1.4% for Ondo and Ekiti States, respectively (Onazi *et al.*, 2025). The states' populations engaged in diverse economic activities, including agriculture, trade, and public service (Folorunso, 2020). The study sites included both urban and semi-urban facilities, covering a range of primary and secondary healthcare centres as well as private facilities and civil society organizations that provide HIV testing and counselling services.

Sample Size Determination

The study targeted all active HTS providers within the selected 200 facilities. A total of 786 eligible participants (counsellors, testers, or those performing both roles) who had been actively engaged in HIV testing services for at least 12 months were enrolled. This census approach ensured comprehensive representation of the HTS workforce across the two states.

Instrument Reliability

The reliability of the questionnaire was assessed using the test-retest method. The instrument was administered twice to a group of 786 respondents from the HTS for the period of the research. The responses from both rounds

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were compared using the Pearson correlation coefficient, yielding a value of 0.85, indicating high consistency over time. This result confirmed the stability and reliability of the instrument for the research

Study Design and Population

A cross-sectional study design was employed. The study population comprised active HIV counsellors, testers, and dual-role providers working in the selected facilities. The sample included providers from varied settings to ensure diversity in socio-economic background, service delivery context, and client demographics.

Data Collection

A structured, pre-coded questionnaire using Google Form was developed to capture socio-demographic characteristics, professional role in HTS, HIV knowledge, and self-reported recency of HIV testing. In addition, provider activities were observed over three months to record client HIV testing uptake rates attributable to each provider.

Data Analysis

Data were cleaned and analysed using descriptive statistics to summarize socio-demographic characteristics, HIV knowledge, provider roles, and testing habits. Chi-square tests were used to assess associations between provider characteristics and HIV testing behaviours. Multivariable logistic regression was employed to identify predictors of client HIV testing uptake, with variables such as age, gender, education level, role, HIV knowledge score, and the provider's own recent HIV testing history included in the model at 95% confidence intervals.

RESULTS AND DISCUSSION

Socio-Demographic Profile of Providers

The study included 786 active HIV Testing Services (HTS) providers across 200 centres. The majority of respondents were aged 26-45, indicating that most providers were in the prime working age group. Females represented a higher proportion (59.3%) compared to males (40.7%), and a significant majority had at least secondary education (33.1%) or tertiary education (53.4%). Most providers (60%) held dual roles (both counselling and testing), which could influence their familiarity and proficiency with testing procedures, and this is represented in Table 1.

Testing Recency and Practice Patterns

Testing Recency and practice patterns are figuratively summarized in Figures 1 and 2. Providers' testing habits reveal critical insights: Only 23 % of all providers reported testing themselves within the last 6 months, indicating a low rate of recent self-testing among providers. A notable 53% of testers tested within the last 6months, whereas only 8% of counsellors tested within this period -highlighting a substantial disparity based on role. Meanwhile, 42% of counsellors last tested between

6-12months ago, and an alarming 12% never tested at all. This suggested that a considerable proportion of providers may not regularly engage in self-testing, potentially affecting their capacity to effectively promote testing among clients (Figure 3).

Impact of Providers' Testing Habits on Clients' Testing Success

Providers who tested recently were significantly more effective at motivating clients to test. Providers who tested within 6months achieved an 87% client testing success rate. Conversely, Those who tested than 12months ago or never tested had considerably lower success rate-42% and 12% respectively. This pattern underscores the importance of provider self-testing in building credibility and trust with clients, thereby enhancing their motivation to get tested.

Factors Influencing Clients Testing Outcomes

The regression result provide insight into the key determinants of successful client testing uptake:

Age

Each additional year in the provider's age slightly reduced the likelihood of successfully convincing a client to test (OR=0.89). This may reflect younger providers employing more current, persuasive communication strategies or being more familiar with recent testing protocols.

Gender

Male providers had a marginally higher success rate (OR=1.20), possibly due to gender-related differences in communication styles or rapport-building

Level Education

Providers with tertiary education were almost twice as likely to succeed in persuading clients (OR=1.91). Higher education may confer better communication skills, enhanced health literacy, and confidence, all of which are critical for effective counselling.

Role within HIV Testing Service

Those who performed both testing and counselling (or dual roles) had over twice the odds of client testing success compared to counsellors alone (OR=2.41). Their procedural familiarity and direct testing capabilities potentially make them more persuasive.

HIV Knowledge Score

A higher HIV knowledge score was a strong predictor of success (OR=3.06). Technical competence and evidence-based counselling seem to motivate more clients to proceed with testing.

Providers Own Recent HIV Testing (Self-Testing)

Providers who had tested recently were significantly more effective (OR=2.59). Their personal experience likely reduces stigma models positive health behavior,

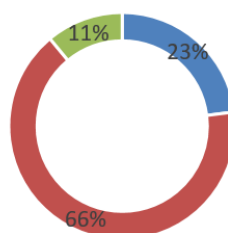
and enhances credibility, all critical factors in encouraging clients to test. The proportion of provider who tested within the last 6 months was low, indicating a gap in personal engagement with HIV testing. There is a

clear relationship between provider characteristics (education, role, knowledge, testing behavior) and client testing outcomes, emphasizing the need for targeted interventions.

Table 1: Socio-demographic characteristics of respondents (n=786)

Variable	Frequency	Percentage (%)
Age ≤25	120	15.3
26–35	250	31.8
36–45	220	28.0
46–55	130	16.5
56+	66	8.4
Male	320	40.7
Female	466	59.3
No formal education	36	4.6
Primary	70	8.9
Secondary	260	33.1
Tertiary	420	53.4
Married	500	63.6
Single	210	26.7
Divorced/Separated	76	9.7
Counsellor	181	23.0
Tester	134	17.0
Both	471	60.0

Testing Habit Among HTS Service Providers (Counsellors and Testers)



■ Tested within Last 6 months ■ Tested within Last 12 months ■ Never Tested

Figure 1: HIV testing habit of the HTS provider

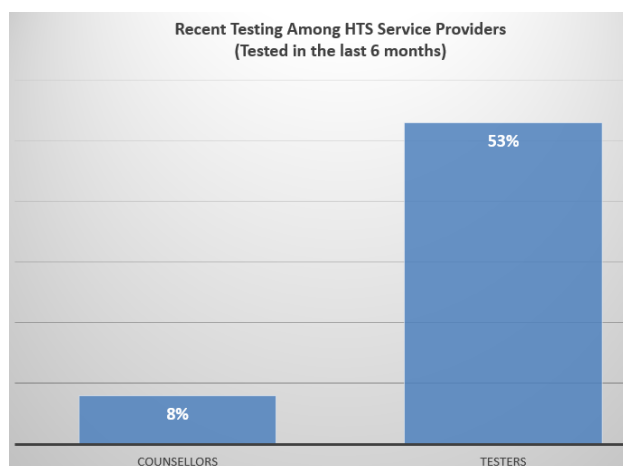


Figure 2: Role based HTS recency among respondents

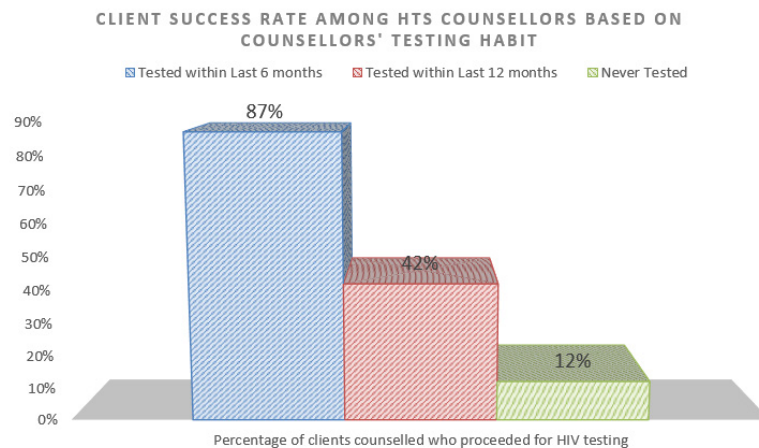


Figure 3: HIV Test recency-based client success rate among counsellors

Table 2: HIV testing status of personnel by categories and corresponding client success rate.

Personnel Category	Testing History	Client Testing Rate (%)
Testers	Test in last 6 months	98
Testers	Test in last 12 months	92
Testers	Never Tested	93
Counsellors	Test in last 6 months	87
Counsellors	Test in last 12 months	42
Counsellors	Never Tested	12

Table 3: Logistic regression analysis of predictors of client success rate

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. Lower	95% C.I. Upper
Age	-0.120	0.050	5.760	1	0.017	0.890	0.805	0.984
Gender (Male=1)	0.180	0.080	5.060	1	0.025	1.200	1.023	1.406
Education (Tertiary)	0.650	0.150	18.780	1	<0.001	1.910	1.436	2.540
Role (Tester/Both vs Counsellor)	0.880	0.220	16.000	1	<0.001	2.410	1.576	3.688
Knowledge score	1.120	0.200	31.360	1	<0.001	3.060	2.072	4.518
Client uptake rate*	0.950	0.020	20.000	1	<0.001	2.590	1.700	3.947
Constant	0.658	0.713	0.853	1	0.356	1.931	-	-

Discussion

200 HTS centers in Ekiti and Ondo States, involving 786 counsellors and testers active for at least 12 months. Only 23% of all respondents tested within the last 6 months, 11% had never tested (Figure 1). Testers were more likely to have tested recently (53%) compared to counsellors (8%) (Figure 2). Counsellors who had tested recently achieved higher client uptake rates (87%) than those who had not (42%), and providers who never tested had the lowest client uptake (12%) (Figure 3). The multivariable regression analysis (Table 3) confirms that a combination of socioeconomic status, provider characteristics, and behavioral practices significantly influences the likelihood of successfully convincing a client to update their HIV test. Providers with tertiary education had nearly double the odds of client testing success (OR = 1.91; 95% CI: 1.44–2.54) compared to those with lower education. Higher

education may confer stronger communication skills, health literacy, and confidence in counselling, enhancing persuasive capacity. This aligns with global evidence that educational attainment in health workers correlates with improved health service delivery outcomes (Liu & Eggleton, 2022).

Role within the HIV testing service also emerged as a strong predictor. Testers and those combining roles were more than twice as likely to achieve uptake (OR = 2.41; 95% CI: 1.58–3.69) compared to counsellors alone. This is consistent with findings from Kyilyosudu *et al.* (2023), which suggested that multi-role providers can leverage procedural familiarity and direct testing capability to improve uptake. Knowledge score was a powerful independent predictor (OR = 3.06; 95% CI: 2.07–4.52), underscoring the importance of technical competence and evidence-based counselling in motivating clients.

The association supports prior literature showing that increased provider HIV knowledge enhances offer rates and acceptance of testing.

Most notably, providers' own HIV testing behavior was strongly associated with client success (OR = 2.59; 95% CI: 1.70–3.95). Providers who have tested recently may model positive health behavior, reduce stigma, and speak from experience, thereby increasing credibility and trust. Similar patterns were observed by Jamil et al (2021), where providers who used HIV self-testing themselves were significantly more likely to offer it to clients.

Age had a modest but significant negative association (OR = 0.89 per year), suggesting younger providers might employ more persuasive communication techniques or be more attuned to current testing protocols. Gender also showed a small effect (OR = 1.20), potentially reflecting cultural norms in provider-client interactions. From a program perspective, these findings suggest that interventions to improve client HIV testing uptake should include: (i) institutionalizing regular, confidential HIV testing for all providers; (ii) targeted capacity building for counsellors; (iii) fostering multi-role competency; and (iv) embedding provider role-modelling into training. These measures align with the UNAIDS 95-95-95 target for 2030, which emphasizes expanding diagnosis through innovative strategies. This study identifies clear quantifiable predictors and the association between behavioral and structural determinants in successful HIV testing service updates. While self-report bias in provider testing history could be a limitation, further studies should explore the longitudinal effects of provider testing interventions on client uptake.

CONCLUSION

The identity of the provider and their own actions matter greatly for clients' HIV testing uptake. Normalizing provider self-testing, enhancing knowledge, and broadening role competencies can accelerate progress toward national and global HIV diagnosis targets. These results collectively suggest that improving providers' own testing habits, enhancing their HIV knowledge, and fostering continuous professional development can significantly influence client testing behavior. Encouraging regular self-testing among providers may serve as a behavioral model for clients, reducing stigma and increasing the acceptability of testing services.

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