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# Towards Sustainable HIV Care Financing: A Stakeholder Analysis of Health Insurance Integration in Nigeria

**Timothy Akinmurele[1*], Oluwaseun Aderibigbe[1], Moji Osadola[1], Temitope Olayemi[1], Olufunmilola Abodunde[1], Yakubu Sambo[2], Peter Attah[3], Onyema Maduakolam[1], Ganiyu Agboola[1], Olatayo Faleye[1], Esther Loyin[1], Oluwasola Oni[1], Chinwe Umeozulu[1] and Folake Isona[1]**

[1]Equitable Health Access Initiative (EHAI)
[2]Institute of Human Virology, Nigeria (IHVN)
[3]Nasarawa State Ministry of Health, Nigeria

[*]**Corresponding Author:** Dr Timothy Akinmurele, Equitable Health Access Initiative, Nigeria, Tel: +2348034059870, E-mail: takinmurele@ehainigeria.org

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## Abstract

Sustainability of HIV care in resource-limited settings depends on the collaborative efforts from patients, HCWs and policymakers. This research seeks to analyse the views of these major stakeholders regarding the sustainability of HIV care with the assistance of the NHIS in Nasarawa State, Nigeria. A cross-sectional survey approach was employed to sample 269 participants aged 18 years and above from which descriptive and inferential statistics was conducted. Results revealed that NHIS voluntary financial contribution among the HIV patients stands at 70% with the key factor being affordability. Nevertheless, there are still indirect cost constraints which include transportation as also revealed by similar proportion of the respondents. The study revealed that HCWs shows a high level of enthusiasm (94.8%) for inclusion of HIV care under NHIS, and adequate training, availability of resources, and a favourable organisational environment were seen as important influential factors. The participants' and policymakers' main obstacles include perceived poor health care funding, inadequate facility, and training for the integration of sustainable HIV care. This paper shows how one stakeholder's function relies on the performance of other stakeholders for effective HIV care. Policy makers were recommended to tackle systemic barriers to improve financing and available health infrastructure, and guarantee drug access. Also, engagement of stakeholders and implementation of specific strategies may improve the relevance of the NHIS in supporting HIV treatment and global goals for HIV management.

**Keywords:** HIV; Health Insurance

## Introduction

Access to antiretroviral treatment continues to gain significant research attention, complementing the global efforts made towards ensuring that the population being served in the antiretroviral units, particularly within the HIV program, receives proper and adequate care [1-3]. The progress achieved has been significantly facilitated by funding from a range of bilateral and multilateral international donors, including the President's Emergency Plan for AIDS Relief (PEPFAR) of the United States of America; Global Fund to Fight AIDS, Tuberculosis, and Malaria; UNAIDS; the World Health Organization (WHO); the United Nations Development Programme (UNDP); and the Bill & Melinda Gates Foundation, among others.

These institutions advocated for a swift expansion of testing, treatment, and prevention efforts to curb the spread of new HIV/AIDS infections, leading to notable reductions in HIV-related deaths and new cases [4]. This success has transformed HIV from an acute crisis into a chronic condition, necessitating a lifelong commitment to treatment. However, the absence of a definitive vaccine or cure underscores the imperative for sustained prevention and treatment programs to operate at a considerable scale in the foreseeable future [4].

As several HIV prevention and treatment initiatives have achieved significant scale, the focus has shifted towards understanding how to enhance and maintain service delivery while adapting to ongoing scientific advancements (Cohn & Baden, 2022) [5]. Various strategies, such as integrating services into existing care systems like OPD, antenatal and TB clinics, as well as employing task-sharing and other innovative approaches to address common challenges, have been explored [6,7]. Furthermore, the urgent need to enhance national ownership underscores the necessity of identifying ways to transition programs that have expanded, often beyond the public sector's confines [8].

In sub-Saharan Africa (SSA), sustaining the financial aspects of the HIV response has become an increasingly pressing concern due to shifts in demographics, diseases, donor development assistance, and domestic health financing [2]. The demographic transition, marked by an ageing population and a concurrent rise in the adolescent demographic, means that individuals living with HIV (PLHIV) now require prolonged treatment. The disease transition further complicates matters as the burden of disease shifts from infectious diseases to non-communicable ones, placing a substantial strain on the healthcare system, particularly in the realm of HIV care [2].

Adding to the complexity, the donor development transition highlights countries moving away from relying on external aid as their national gross domestic product per capita improves, even though challenges in managing post-aid shocks persist [2]. The shift towards domestic financing involves countries mobilising internal resources to fund their health systems during the transition away from external aid. This is accomplished by prioritising health in government budgets and increasing public healthcare spending through prepaid pooled mechanisms [2]. However, the current financial instability, further increased by the COVID-19 pandemic, coupled with the ongoing war in Ukraine and the existing debt crisis, has further constrained the fiscal capacity of more than 60 countries to make substantial investments in health [9].

Despite an increase in domestic financing of the HIV response during the last decade, SSA countries continue to depend on external aid, and a large gap exists between available financing and the funding needed to achieve global HIV goals [10]. To continue progress toward addressing HIV as a public health threat and sustain the progress of domestic and donor investments, all African governments, regardless of their ability to pay, must take measures to establish pathways and actions toward a successful transition from development assistance to domestic financing of the HIV response [1, 3]. Yet, the government of Nigeria has made limited progress in translating political commitment to reduce donor dependency into increased domestic resources to ensure the sustainable impact of the HIV response.

Sustainability means that a health program or country can maintain and scale up service coverage to a level that will provide continuing control of the health problem even after the withdrawal of external funding [11]. In the context of HIV, sustainability implies that governments can lead and manage the response by developing a country-led sustainability roadmap, supporting country visions, closing the funding gap to achieve the goal of eliminating HIV as a public health threat and maintaining impact, effectively using local capacity, improving alignment across donors and governments, finding inefficiencies, addressing inequalities, and integrating into and contributing to resilient health systems [12]. In other words, when countries move away from donor-dependent financing, they can successfully expand their national HIV response, reach epidemic control, and maintain the control after the transition while having robust systems and decision-making processes in place to ensure high and equitable coverage of target populations [13].

Nigeria, like several other low-and middle-income countries (LMICs), adopted Social Health Insurance (SHI) as the preferred method to generate revenue for its enormous health financing gaps [14]. To this end, the National Health Insurance Scheme (NHIS) was introduced in 2005 with the primary objective of improving citizens' health status through the provision of quality healthcare services with financial risk protection [15] for individuals under the scheme.

However, since 2005 the scheme has been able to cover only about 5% of the nation's population, 56.7% of which were males [16-19]. Most of the enrollees are either employed with the government and related organisations, or are resident in urban settings, while the informal sector workers and residents of more rural areas remains largely excluded., This implies that, these population either do out-of-pocket payments- (with risk of impoverishment) or have limited access to and utilisation of healthcare services [16].

Contributions under the NHIS for the formal sector are income-related, constituting 15% of the employee's basic salary, with the employee responsible for 5%, while the employer covers the remainder (NHIS, 2022). .. Several other programs under the NHIS, such as the Community-Based Social Health Insurance Programme, Urban-Self Employed Social Health Insurance Programme, Children Under-Five Social Health Insurance Programme, Permanently Disabled Persons Social Health Insurance Programme, and the Prison Inmates Social Health Insurance Programme, are yet to be widely implemented (NHIS, 2022).

The mode of contribution to the NHIS may thus exclude those not engaged in the formal sector of the economy. These are mainly resident in the rural areas, thus creating an urban-rural disparity in access to health care [20]. To ensure an unhindered adequate coverage and sustainable access to health-care services, a prepayment health-care financing mechanism such as is provided by the NHIS should be designed to suit the peculiar socioeconomic and cultural characteristics of its potential beneficiaries, including rural dwellers. Implementation of such health-care financing schemes requires some understanding of the socioeconomic situation, cultural values, and perception of the people [20].

The NHIS faced several drawbacks which led to the review of the 1999 Act that set up and establishment of a new National Health Insurance Authority Act (NHIA) in 2022 [18]. This new NHIA law addressed several shortcomings of the NHIS, including the implicit voluntary enrolment feature and the decentralization of the scheme across all 36 States of the Federation and the FCT to establish State Social Health Insurance Schemes. However, there are still several imminent challenges in its implementation. These challenges include capacity for enforcement of its enrolment mandate, poor prioritization of health budget and spending by the Government (at the Federal, State and LGA levels), shortage of healthcare workers as well as inadequate healthcare coverage and poor state of existing health infrastructures [18].

Nasarawa State, like several other States in Nigeria, has benefited from external support to strengthen its HIV care initiatives. These collaborations with international organisations have played a significant role in enhancing the state's healthcare capacity. In 2018, the Nasarawa State Government also set up the Nasarawa State Health Insur-

ance Agency to manage the Nasarawa State Social Health Insurance Scheme. The Social Health Insurance Scheme was set up to provide high quality healthcare coverage as well as improve and protect the health and financial security of individuals, families, businesses, and communities within the state. To date, over 188,000 residents are enrolled in the scheme [21].

As the healthcare landscape continues to evolve, there is a growing recognition of the need to assess the long-term sustainability of HIV care programs in the state. This recognition is not rooted in any specific funding changes or formalized decisions but rather stems from the nature of global health initiatives and evolving priorities. There is a dearth of literature on the perception of Nigerians living with HIV on the health financing options acceptable to them to ensure uninterrupted access to the high-quality ART services, as well as the opinions and or perceptions of available care providers and policy makers on the issues and challenges around the sustainability of HIV care program in Nigeria. This study, therefore, aims to explore the issues and implications of the NHIS as a health financing option for the sustainability of the existing HIV treatment program within the study population.

## Objectives

This research aims to determine patients' perceptions of HIV care sustainability through the Health Insurance Scheme in Nasarawa State. However, to achieve this, we would approach it through the following set goals;

1. To determine the level of acceptance and willingness of patients to pay (WTP) for HIV care through the health insurance scheme.

2. To determine the ability of patients to pay for HIV care and services through the health insurance scheme in Nasarawa State.

3. To determine the willingness of HCWs in participation in the care and treatment of PLHIVs

4. Identify challenges faced by HCWs and policymakers and explore strategies for effective policy implementation to sustain HIV care integration

## Methods

### Study Design and Sampling

This study employed a cross-sectional survey design to collect primary quantitative data through the administration of questionnaires to address the study objective among persons living with HIV (PLHIV) and accessing free HIV care and treatment services in 10 hospitals in Nasarawa State, as well as healthcare workers in the facilities and policymakers in the State Ministry of Health and Nasarawa State Health Insurance Agency. A total of 269 individuals were sampled for this study, 172 of them were PLHIV, and 97 were healthcare workers.

## Data Collection and Analysis

**Sample Size Calculation:** The sample size for this study was calculated using Cochran's Formula for a large population [22].

Formula: $n_0 = Z^{*2} * p * q/e^2$

Parameters Used:

$n_0$ = required sample size

Z = Z-score for chosen confidence interval (1.96 for 95% CI)

P = Estimated proportion of population with the characteristic of interest (0.5% used for maximum variability)

q = 1 – p

e = Margin of error (+/- 6% or 0.06)

**Sample Size:** 267

**Sampling Technique:** Due to funding and logistical constraints, purposive sampling (non-probability) was used to select 10 hospitals providing free HIV care and treatment services, as well as PLHIV within the hospitals, for the administration of the survey tool. Hospitals and participants were selected to ensure maximum variation of some key criteria, including public/private/faith-based, urban/rural and high/low income communities.

**Participants:** Adults 18 years and above PLHIV, accessing care in selected healthcare facilities in Nasarawa state available during data collection and gave consent; Healthcare workers in selected facilities in Nasarawa State; and Policy makers in Nasarawa State.

**Survey Instrument:** An interviewer administered structured questionnaire was developed to collect participants' data. The questionnaire was adapted from previous studies conducted on WTP for HIV services in Nigeria [23]. The research instrument was adapted to assess participants' perceptions, willingness, and preferences regarding HIV care programs and their sustainability through the health insurance scheme.

**Procedure:** Our on-site staff were trained to administer the questionnaires to participants at selected healthcare facilities and other appropriate locations within Nasarawa State.

**Data Variables:** The questionnaire collected data on demographic information, awareness of HIV care programs, willingness to pay for HIV care through health insurance, and other relevant factors.

**Analyses:** Quantitative data were analyzed using SPSS version 29. Both descriptive and inferential statistical analyses were used to analyse the study data. Descriptive statistics such as frequencies, percentages, means, and standard deviations, were computed to provide a summary of the demographic characteristics and participants, while the inferential statistical analysis was computed to identify significant associations or correlations between variables.

**Ethical considerations:** Ethical approval for the study was obtained from the Nasarawa State Health Research Ethics Committee (HREC) of the Nasarawa State Ministry of Health before commencement. Participants were informed about the study's objectives and their rights to participate or withdraw from the study based on their preference. Also, their consent was obtained before data collection.

## Results

### Objective 1

To address the first objective of assessing patients' acceptance and willingness to pay for HIV care on the Nasarawa State Health Insurance scheme, the Chi-square Test was used to measure acceptance, while descriptive analysis evaluated their WTP. Results are presented in Tables 1 and 2 below.

**Table 1:** Descriptive Statistics, showing the willingness of patients to pay for HIV care through the health insurance scheme in Nasarawa State.

| Willingness | Persons (n) | Percentage (%) |
|---|---|---|
| Definitely unwilling | 1 | 0.62 |
| Somewhat Unwilling | 17 | 10.56 |
| Neutral | 31 | 19.26 |
| Somewhat Willing | 69 | 42.86 |
| Definitely Willing | 43 | 26.71 |
| Total | 161 | 100 |

Results in Table 1 indicate that 70% of the respondents expressed their willingness (26.71% definitely willing and 42.86% somewhat willing) to have their HIV care financed through the Nasarawa State Health Insurance Scheme (NASHIS). Furthermore, the results show that 19.26% of respondents were "neutral," indicating ambivalence about the use of health insurance for their healthcare needs, while 10.56% were "somewhat unwilling," and 0.62% were "definitely unwilling" to have their HIV care financed through NASHIS. This lack of willingness among a minority of participants suggests scepticism about the scheme's effectiveness or affordability. For these respondents, reliance

on external support from international organisations like USAID, UNICEF, and PEPFAR may still be perceived as necessary to maintain access to HIV care services.

Further analysis was conducted to get a better understanding of the relationship between participants' WTP premiums and their acceptance of health insurance as a sustainable financing mechanism (see Table 2).

**Table 2:** Chi-Square statistics showing the relationship between the willingness to pay premium and monthly medication expenses of patients as it relates to their perception of the health insurance scheme in Nasarawa State.

| | Value | df | Asymptotic Significance (2-tailed) |
|---|---|---|---|
| Pearson Chi-Square | 305.88[a] | 20 | .000 |
| Likelihood Ratio | 384.61 | 20 | .000 |
| N of Valid Cases | 269 | | |

Table 2 reveals a significant association between willingness to pay and acceptance of the social health insurance scheme among the study population (2 =305.88, df = 20, p < .001).

**Table 3:** Summary of Chi-Square statistics, showing the association between the willingness to pay and factors influencing willingness to pay for HIV care services in Nasarawa State.

| | Value | df | Asymptotic Significance (2-tailed) |
|---|---|---|---|
| Pearson Chi-Square | 312.560[a] | 20 | .000 |
| Likelihood Ratio | 389.2 | 20 | .000 |
| N of Valid Cases | 269 | | |

The results in Table 3 indicate a strong association between WTP and factors such as; affordability of the service, availability of healthcare facilities, trust in the health insurance system, quality of care, and the range of services covered (2 =312.56, df = 20, p < .001).

## Objective 2

The second objective was to determine the ability of patients to pay for HIV care and services through the Nasarawa State Health Insurance Scheme. To establish this, the participants were assessed on their ability to afford a premium of N12, 000 per annum for the basic minimum package of healthcare. They were also asked if they ever had financial constraints in accessing healthcare services. The results are seen in Tables 4 to 6.

**Table 4:** Can you Afford to Pay N12,000 Per Year as the Basic Minimum Package for Health, Which Includes HIV Care and Services?

| Perspectives | Frequency (n) | Percentage |
|---|---|---|
| Affordable | 84 | 52.18 |
| Neutral | 28 | 17.39 |
| Somewhat Unaffordable | 20 | 12.42 |
| Very Affordable | 20 | 12.42 |

| | | |
|---|---|---|
| Very Unaffordable | 9 | 5.59 |
| Total | 161 | 100 |

Table 4 shows that most of the study participants (64.6%) believe that an annual premium of N12,000 is affordable for their basic healthcare coverage.

**Table 5:** Have you ever faced financial difficulties in accessing HIV care services?

| Responses | Frequency (n) | Percentage |
|---|---|---|
| No | 48 | 29.81 |
| Yes | 113 | 70.19 |
| Total | 161 | 100 |

Results in Table 4 show that over 70% (n=113) of the total sample acknowledged experiencing some level of financial difficulty in accessing HIV services in the past. By implication, this means that, while HIV treatment services may be offered free of charge, the indirect costs associated with accessing these services which includes but is not limited to, transportation, time off work, childcare, and other logistical expenses pose significant barriers to service utilisation.

**Table 6:** Summary of Chi-Square showing the relationship between the affordability of the basic health package and the experience of financial difficulties in accessing HIV care services.

| | Value | df | Asymptotic Significance (2-tailed) |
|---|---|---|---|
| Pearson Chi-Square | 278.611[a] | 10 | .000 |
| Likelihood Ratio | 370.676 | 10 | .000 |
| N of Valid Cases | 269 | | |

Results in Table 6 showed that there is a significant relationship between the affordability of the basic health package and the experience of financial difficulties in accessing HIV care services (2 = 278.611, df = 10, p < .001). This finding underscores the pivotal role of financial factors in determining access to HIV care services. By implication, this result suggests that individuals who find it unaffordable are more likely to have faced financial difficulties in accessing HIV care services. Therefore, the importance of making healthcare financing more accessible and affordable for individuals to reduce the financial barriers to accessing HIV care services cannot be overemphasized.

## Objective 3

The third objective was to determine the willingness of healthcare workers (HCWs) to participate in the care and treatment of people living with HIV (PLHIV). Descriptive and chi-square analyses were used to explore this willingness and the factors influencing it.

Willingness to Participate

**Table 7:** Descriptive Statistics, showing the willingness of HCWs to participate in the care and treatment of PLHIV

| Willingness | Persons (n) | Percentage (%) |
|---|---|---|

| | | |
|---|---|---|
| Willing | 92 | 94.85 |
| Indifferent | 4 | 4.12 |
| Unwilling | 1 | 1.03 |
| Total | 97 | 100 |

Descriptive statistics revealed that the majority (92%) of respondents were willing to actively participate in the care and treatment of PLHIV. A smaller proportion (1.03%) expressed unwillingness, while 4.12% remained neutral. These results indicate a predominantly positive attitude among HCWs towards engaging in PLHIV care, suggesting a general openness to supporting HIV-related healthcare initiatives.

## Factors Influencing Willingness

We further explored possible factors influencing their willingness. We allowed for participants to select multiple options and the results in Table 8 presents a descriptive analysis of the analysis.

**Table 8**: Summary of Descriptive Statistics Showing the Results of Factors Influencing the Willingness of Hcws

| Factors | Frequency | Percent |
|---|---|---|
| Adequate resources and equipment | 7 | 2.6 |
| Adequate resources and equipment, Supportive work environment, Incentives | 1 | 0.4 |
| Incentives | 1 | 0.4 |
| Supportive work environment | 11 | 4.1 |
| Supportive work environment, Incentives, Time availability | 1 | 0.4 |
| Training and Education | 40 | 14.9 |
| Training and Education, Adequate resources and equipment | 2 | 0.7 |
| Training and Education, Adequate resources and equipment, Incentives | 1 | 0.4 |
| Training and Education, Adequate resources and equipment, Supportive work environment | 6 | 2.2 |
| Training and Education, Adequate resources and equipment, Supportive work environment, Incentives | 5 | 1.9 |
| Training and Education, Adequate resources and equipment, Supportive work environment, Incentives, Time availability | 16 | 5.9 |
| Training and Education, Adequate resources and equipment, Supportive work environment, Incentives, Time availability | 1 | 0.4 |
| Training and Education, Adequate resources and equipment, Supportive work environment, Time availability | 1 | 0.4 |
| Training and Education, Adequate resources and equipment, Time availability | 1 | 0.4 |
| Training and Education, Supportive work environment, Incentives | 1 | 0.4 |
| Training and Education, Supportive work environment, Time availability | 2 | 0.7 |

The results in Table 8 showed that training and education (78.35%) are the most significant elements that impacts HCWs' willingness to work with PLHIVs. Other significant factors included adequate resources and equipment (42.27%), a supportive work environment (46.39%), and incentives (27.84%). Responses showed that a combination of these factors significantly im-

pacts HCWs' readiness to participate, highlighting the multifaceted nature of their motivations.

### Association between Willingness and HCW Characteristics

The association between the roles of the HCWs' work-related characteristics and their willingness to participate was analysed using Chis-Square analysis, results are presented in Table 9.

**Table 9:** Summary of Chi-Square showing the association(s) between HCWs' professional characteristics and their willingness to participate

| | Value | df | Asymptotic Significance (2-tailed) |
|---|---|---|---|
| Pearson Chi-Square | 278.611[a] | 10 | 0 |
| Likelihood Ratio | 370.676 | 10 | 0 |
| N of Valid Cases | 269 | | |
| **Years of Experience** | | | |
| Pearson Chi-Square | 278.8a | 16 | 0 |
| Likelihood Ratio | 356.78 | 16 | 0 |
| No of Valid Cases | 269 | | |

The study revealed a strong association between the participants' professional roles in the healthcare and their willingness to participate (Pearson Chi-Square, $^2$ = 774.05, df = 256, $p$ <.001). This implies that willingness levels varied significantly across different professional roles. Further analysis revealed that other factors such as years of experience is significantly associated with HCWs' willingness to participate (Pearson Chi-Square, $^2$ = 278.8, df = 16, $p$ < .001). That is, those with longer tenures exhibited higher willingness which may be traceable to the frequency of and exposure to trainings and education in addition to their clinical experiences.

## Objective 4

In the study, we also attempted to identify the challenges encountered by healthcare workers and policymakers in the implementation of HIV integration and sustainability. Descriptive statistics was computed to determine these factors, and similar to the previous objective (See Table 7) we allowed for participants to select multiple options, the results are summarised in Table 10.

**Table 10:** Summary of descriptive statistical analysis showing the challenges and potential solutions to the implementation and sustainability HIV care integration

| Factors | Frequency | Percent |
|---|---|---|
| Challenges | | |
| Availability and/or quality of drugs | 35 | 36.08 |
| Training-related concerns | 72 | 74.23 |
| Increased interruptions in treatments | 32 | 33 |
| Sustainability of Healthcare Financing | 44 | 45.36 |
| Others (death of patients, increased treatment failures, issues with test-kits, stigmatization, and subsidizing) | 7 | 7.23 |

| Solutions | | |
|---|---|---|
| Subsidization or full financial Supports | 11 | 11.34 |
| Availability of drugs | 19 | 19.59 |
| Training, Workshops, and Awareness creation | 52 | 53.61 |
| Staff (HCWs) Welfare | 2 | 2.06 |
| Stakeholders Collaboration: Government, HCWs, and Patients | 8 | 8.25 |
| Increase/Improve Infrastructure | 4 | 4.12 |

The findings in Table 10 highlight key challenges impeding the effective implementation of HIV integration and sustainability efforts within the study setting. These findings are well supported in literature that has explored barriers to health systems strengthening in low-resource settings. The issues identified, including the availability and quality of drugs, inadequate training, interruptions in treatment, and issues of financing, represent systemic and multifaceted barriers that require targeted interventions to ensure the long-term viability of HIV care.

## Discussion

The finding that 70% of respondents expressing willingness to have the HIV care financed through NASHIS suggests that participants are open to paying premiums and enrolling in the scheme, reducing reliance on out-of-pocket payments (OOPP) for HIV treatment. This align with the report of [24], who suggested that the socio-economic realities in Nigeria often limit individuals' ability to afford healthcare without support from structured financial schemes like health insurance. Similarly, [25] highlighted that broad participation in health insurance is essential for the scheme's sustainability, as premium contributions provide a necessary funding pool to cover healthcare costs. While their argument centres on the need for collective participation, it reflects the potential of health insurance to minimise financial hardship for healthcare users, including but not limited to those accessing HIV care services.

The strong association between WTP and factors like affordability of the service, availability of healthcare facilities, trust in the health insurance system, quality of care, and the range of services covered aligns with the opinion of [26], who documented that access and affordability are key determinants of healthcare service usage in Nigeria. The relationship between these variables and WTP suggests that transferring the financing of HIV care in Nigeria to the service users without addressing these factors may negatively impact sustainability.

The finding that most of the respondents suggests that there is a significant openness among the respondents towards the proposed payment structure for health insurance, which includes coverage for HIV care services. Such willingness demonstrates the potential feasibility of introducing structured premium payments as part of the healthcare financing model in Nasarawa State.

The affordability expressed by these respondents tandems previous research that appropriately priced health insurance schemes could bridge the financial gaps that prevent low-income populations from accessing quality healthcare services [27]. Similarly, it has been observed that the success of health insurance schemes in Nigeria depends heavily on designing premiums (with the involvement of community stakeholders and users) to reflect the economic realities of the communities being targeted [28-30]. This suggests that while N12,000 annually may be perceived as affordable for a majority, careful monitoring and periodic adjustments might be necessary to accommodate inflation and variations in economic conditions.

Contrary to those in support of the proposed premium, 18.01% of respondents indicated that the annual premium would be unaffordable for them, with responses categorised as somewhat unaffordable (12.42%) or very unaffordable (5.59%). Although this group represents a minority, their concerns cannot be overlooked, as financial barriers for even a small proportion of the population could undermine the inclusivity and effectiveness of the scheme. Fur-

thermore, while affordability is a critical factor, it is worth noting that financial constraints often interact with other barriers, such as accessibility and trust in the health system.

The results underscore the importance of engaging with the minority population that perceives the premium as unaffordable, to ensure equitable access to HIV care services and maintain the progress towards the UNAIDS 95-95-95 targets. Strategies such as tiered premiums or subsidies for low-income households could help address these disparities, and with that, enhance the scheme's overall effectiveness and sustainability.

Most of the participants (over 70%) reported experiencing financial difficulty in paying for the indirect expenses associated with accessing free HIV services. This finding underscores the persistent economic challenges faced by individuals seeking to access HIV care and highlight the importance of addressing not just the direct costs but also the broader financial implications of care access.

The burden of indirect costs has been well-documented as a critical factor influencing healthcare access in resource-limited settings. For example, studies have shown that individuals living far from healthcare facilities (especially in remote communities) often incur substantial transportation costs, making regular clinic visits financially unsustainable for many [19, 30]. Additionally, for low-income households, the opportunity costs associated with time spent travelling to and from health facilities can deter consistent engagement with care services. These financial burdens can compromise adherence to antiretroviral therapy (ART) and increase the risk of treatment failure or loss to follow-up (LTFU), which would undermine the efforts to sustain the progress made in HIV control initiatives.

Furthermore, indirect costs disproportionately affect already marginalized populations, such as those living in rural or remote areas, women, and individuals engaged in informal or precarious employment. For women, for instance, the need to balance household responsibilities, work (usually petty-trading or farming) with long travel times and healthcare appointments can also exacerbate the burden of accessing care. The acknowledgment of financial difficulty by such a significant proportion of the sample suggests that indirect costs may erode the perceived value of free HIV services, and make them less accessible to those who need them most.

Therefore, addressing these indirect costs, concerned stakeholders can enhance equity and accessibility in HIV care, which would reinforce the global efforts on creating awareness of status (95%), the consistent ART uptake (95%), and high rate of viral suppression (95%) [31]. Without such measures, the sustainability of HIV care programs remains vulnerable to the socioeconomic realities faced by the most affected populations.

A statistically significant relationship was demonstrated between the factors influencing willingness and HCWs' stated willingness (Pearson Chi-Square, $^{2}$ = 479.62, df = 64, $p < .001$). This indicates that specific motivators, such as access to resources and training, strongly shape HCWs' attitudes towards participation. Lastly,

These results suggests that most HCWs are willing to engage in PLHIV care and as such, it reflects positive disposition towards supporting HIV-related healthcare delivery. Although, HCWs in patient-facing roles may be more motivated due to their direct interaction with PLHIV, while those in less involved roles might lack the same sense of responsibility or understanding, hence, a possibility for lower willingness levels.

### Training and Technical Know-How Deficits

The lack of training and technical know-how among HCWs, were reported by 74.23% of respondents, thus representing the most significant challenge. This finding underscores the need for capacity-building initiatives to equip HCWs with the necessary skills to deliver integrated HIV care. Studies have consistently shown that inadequate training undermines healthcare delivery by limiting HCWs' ability to adopt new protocols, address patient needs effectively, and manage complex care processes. For example, [32] reported that continuous professional education is pivotal to improving HCWs' competency and the overall quality of care in HIV programs. Similarly, [33] emphasised that periodic retraining helps reduce knowledge gaps, among healthcare workers, even though their study focused more on Diabetes Mellitus.

### Availability and Quality of Drugs

Drug availability and quality was identified by 36.08% of respondents as another challenge affecting WTP and access to quality care. Interruptions in drug supply chains can lead to treatment delays, non-adherence, and the development of drug-resistant strains, which would significantly undermine the effectiveness of HIV programs. This finding is supported in [34], who reported that inconsistent access to antiretroviral therapy is a leading cause of poor health outcomes among PLHIVs in sub-Saharan Africa. The issue is often exacerbated by systemic inefficiencies in procurement and distribution mechanisms, as well as underfunded supply chain systems.

### Healthcare Financing and Payment Systems

Sustainability of healthcare financing was reported as a critical challenge by 45.36% of respondents, reflecting the ongoing reliance on donor funding for HIV programs in many low-income settings. As external funding declines, there is an increasing need for domestic resource mobilisation and innovative financing models to ensure program continuity. According to a 2023 report by UNAIDS, transitioning from donor-funded to locally financed HIV programs remains a significant challenge for many countries [35]. Without sustainable financing mechanisms, the affordability of services for PLHIV may be jeopardised, increasing the risk of treatment interruptions and poorer health outcomes.

### External Interruptions and Other Issues

External interruptions and other issues such as the death of patients, increased treatment failures, and issues with test kits, were highlighted by a total of 40.23% of the respondents. Additionally, stigma, while less frequently cited, remains a critical barrier to accessing HIV care. Following the report of [36, 37], stigma negatively impacts the willingness of PLHIV to seek care and adhere to treatment which ultimately undermining the goals of HIV integration and sustainability.

### Proposed solutions and their implications

Data on potential solutions reflect a multidimensional approach to addressing these challenges. Training and awareness, which accounted for 53.61% of the proposed solutions, emerged as the most frequently recommended strategy. This highlights the need for systemic investments in capacity building, not only for HCWs but also for the broader health system to support knowledge dissemination and implementation. As supported by [38] model of healthcare quality, improving provider competence directly enhances care processes and outcomes.

The availability of drugs, cited as a solution by 19.59% of respondents, reinforces the need to strengthen supply chains and ensure uninterrupted access to essential medications. Subsidisation or full financial support (11.34%) further emphasises the role of affordability in sustaining care, particularly so in regions where poverty seem high [39] such as Nasarawa State. It is already tough to feed daily for many individuals in these poverty laden societies, having to add logistics to that, and thought of medications becoming what they will pay for might just make worse the epidemic of HIV, that is, it will threaten the sustainability of the program and the global target of 95-95-95. Furthermore, stakeholder collaboration (8.25%) and infrastructure improvements (4.12%) were also suggested, and these highlights the importance of a coordinated and holistic response to address systemic barriers. Collaboration between government, policymakers, HCWs, and community actors is particularly crucial for ensuring that resources are efficiently allocated and that HIV integration efforts align with broader health system goals.

### Limitations of the Study

A non-probability purposive sampling technique was employed in this study, limiting the statistical generalizability of its findings to the PLHIV population in Nigeria. The study is also limited by potential self-reporting bias on WTP, which may reflect their social desirability and hypothetical bias. The cross-sectional design of the study also places limitations on causal inference as it fails to capture potential temporal shifts from changes in policy or the economy.

## Conclusions

This study provides valuable insights into the perspectives of HIV care service users regarding out-of-pocket funding for HIV care in Nasarawa State. Despite a notable willingness among patients to have their HIV care financed

through out-of-pocket payments, financial challenges will remain a significant barrier to accessing HIV care services. These findings underscore the importance of understanding and addressing the financial implications of HIV care from the service users' standpoint. The findings highlight the need for sustainable financing mechanisms that ensure affordability and accessibility of HIV care services while minimising financial burdens on service users.

## Recommendations

Based on the findings of this study, the following are recommended:

**Implement Comprehensive Training and Capacity-Building Initiatives**

Addressing the significant skills gap among healthcare workers is critical to improving HIV care sustainability. Thus, regular and targeted training programs, workshops, and awareness creation should be institutionalised to improve HCWs' competency which may improve how well they support patients through improved knowledge, which may enhance medications adherence for PLHIV, and ensure effective integration of HIV care into existing healthcare systems.

**Strengthen Drug Supply Chains to Ensure Availability and Quality**

Ensuring the consistent availability and quality of antiretroviral drugs (ARVs) is essential for preventing treatment interruptions and maintaining patient adherence. Therefore, efforts should focus on improving strengthening supply chains and preventing stockouts at health facilities to guarantee uninterrupted access to essential medications.

**Enhance Sustainable Financing Mechanisms through Subsidisation and Policy Reforms**

Sustainable healthcare financing remains a significant challenge, and as such, reducing financial barriers for PLHIV, there is need for policymakers to introduce subsidisation schemes, provide full or partial financial support, and strengthen health insurance programs like NHIS to accommodate vulnerable and low-income populations. A well-structured financing model will ensure equitable access to HIV care and reduce reliance on external donor funding.

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