

Research Article

The Status and Challenges of HIV Services in Niger State: A Cross-Sectional Survey of Providers and Clients

Olabimpe Gbadeyan^{1,*} , **Ebenezer Obi Daniel²** , **Adeola John Gbadeyan³**, **Oladele Abidoye³**, **Joseph Clark³**, **Shadrack Onoja³**, **Ahmed Mamuda Bello¹**, **Michael Avwerhota⁴**, **Christiana Asibi-Ogben Inegbeboh¹**, **Israel Olukayode Popoola⁵**, **Michael Olabode Tomori¹**, **Adebanke Adetutu Ogun⁶**, **Oladapo Michael Olagbegi⁷**

¹Department of Public Health, Texila American University, Georgetown, Guyana

²World Health Organization, Regional Office for Africa, Emergency Preparedness and Response Cluster, Brazzaville, Congo

³Department of Public Healthcare, Citizen Hospital, Suleja, Nigeria

⁴Department of Public Health, Atlantic International University, Hawaii, United States of American

⁵Department of Epidemiology and Community Health, University of Ilorin, Ilorin, Nigeria

⁶International Organization for Migration, Abuja, Nigeria

⁷South African National Bioinformatics Institute, University of the Western Cape, Western Cape, South Africa

Abstract

Introduction: The incidence of HIV/AIDS in Nigerian is on the decline, but with the trio of high inflation, high unemployment, and high terrorism in the country; lot of synergies are still needed to end the HIV scourge. **Objective:** The study was carried out to determine the status of HIV services in Niger state. **Method:** A cross-sectional survey, using a simple randomization sampling method, and the client's viewpoint in health facilities across Niger state was undertaken to examine the challenges faced by HIV service providers. Data from 351 HIV providers, 361 clients were collected using questionnaires; IBM and Pearson correlation were used for descriptive and inferential statistics respectively. **Results:** The mean age of the providers was ($M = 30.50$, $SD = 8.2$). Challenges included poor salary ($M = 2.44$, $SD = 1.16$), staff shortage ($M = 3.01$, $SD = 1.24$), lack of recognition & incentives ($M = 2.57$, $SD = 0.99$; $M = 2.63$, $SD = 1.08$), others were infrastructural deficit, inadequate funding, training and materials; poor electricity and internet; lack of research and unionism among others. The non-enabling factors challenges were burnt out ($M = 3.01$, $SD = 0.99$), insecurity ($M = 3.51$, $SD = 1.09$), working extra hours ($M = 3.02$; $SD = 0.98$), migration desire ($M = 3.87$, $SD = 1.06$). **Conclusion:** It is highly overdue, that all HIV stakeholders in the country take complete custodian of all HIV service components; come up with a sustainable policy to steer toward HIV eradication program, by increasing the enabling factors, and reducing the non-enabling factors.

Keywords

Challenges, Clients, HIV Providers, Niger State, Nigeria

*Corresponding author: gbadeyan22@yahoo.co.uk (Olabimpe Gbadeyan)

Received: 12 February 2024; **Accepted:** 26 February 2024; **Published:** 7 March 2024



Copyright: © The Author(s), 2023. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

1. Introduction

According to the UNAIDS in the recent burden of HIV, Nigeria was ranked as the third largest country with the global burden of the HIV epidemic [1]. In Africa, the foremost cause of death among adolescents and young people (age 10-24 years) is Human Immunodeficiency Virus (HIV), and globally it is the second cause of death in young people [2, 3]. In 2016, a “fast track response strategy” was developed by UNAIDS and partners, to curb the menace of HIV with set recommendations and goals, but all these could not be fulfilled [4]. Despite the significant strides that have been achieved in the fight against HIV/AIDS, it is saddening to discover that the global targets for 2020 were not met, as HIV still remains a major public health issue, affecting millions of lives all over the world [5].

Reported challenges that prevented the achievement of these goals, and targets for 2020 includes: reduction in funding for the global AIDS response, missed treatment coverage, less attention on primary prevention, programs not reaching the most vulnerable, and those in need of the services; insufficient attention to equity of access, tackling of stigmatization and discrimination, lack of support for community led-programs, and the outbreak of COVID-19 [4]. HIV/AIDS epidemic needs a robust and effective testing service, as a crucial component in the fight to end its grip on humans [6]. For the above to be achieved, the role of quality HIV services, as well as the human resources to accomplish the task cannot be over emphasized.

In 2020, 37,700,000 were estimated to be living with HIV globally, 680,000 died from HIV related cases, and 1,500,000 were newly infected; also 73% (28 million) of people living with HIV were receiving life-long Anti-Retroviral Therapy (ART) as 2021 [5]. In 2020, 84% of all people living with HIV knew their status, and about 6.1 million did not know they were living with HIV [7]. On 1st December 2021, the Director General WHO during the world AIDS’s day opening remark stated that, “the global HIV epidemic has fainted from the headlines, but it is not over, far from it” [5].

Since HIV infection was recognized in 1981, lots of researches have been done to gain more insight about the virus, mode of transmission, also, many policies have been enacted; similarly, are guidelines developed at all levels of care up to the international level. The world AIDS day commemorations have been in existence since 1988, it was established to raise awareness about the pandemic all over the globe [8], it is however disheartening that since inception to date, no themes of the commemoration has been wholly dedicated to the front-line workers who had borne part of the physical, emotional and psychological burdens of care; the sacrifices, and the ‘burnt out’ of the pandemic. UNAIDS on 29th Nov, issued warning that if no urgent action is taken, a resurgence of up to 7.7 million AIDS related deaths will occur over the next 10 years.

1.1. HIV Services

The 5Cs of HIV testing services (HTS) has been set as minimum standards according to WHO, for all HIV services, these include: Consent, Confidentiality, Counseling, and Connection to care, treatment and other services, and Correct-test results [9]. For these services to be actualized, the importance of human resource cannot be underestimated. During counseling, confidentiality of the clients result, and bio-data are to be monitored, and guarded by the counselor who must ensure that the ethic of confidentiality is routinely observed. Patients’ files and data are to be kept safe, and should not be shared or disclosed without the patient consent, except in special cases of surveillance, legal, medical, and surgical management of the patient [10]. In this respect, most studies have documented inadequate and limited spaces, absence of verbal or written consents [11, 12]. Among the documented barriers to HIV services are social class of clients [13], culture and religious [14], discordant partners, fear of divorce, family members reactions, loss of jobs, scholarship, and other privileges [15, 16].

1.2. Provider Non-Enabling/Hygiene Factors

In the course of duty, challenges are bound to occur, however, for effective service, the presence of some non-enabling factors causes’ job dissatisfaction and must be reduced. Such factors include, burnt-out, targets delivery [17], lack of organization support, presence of occupational hazards [18], secondary stigmatization [19], avoidance of conflict at work, litigations, socio-economic and religious factors; client’s literacy, language barriers [20], and insecurities [21].

1.3. Provider Enabling/Motivating Factors

For the optimal performance of the providers, some factors are necessary to be available and enabled, these include regular training, career growth, job security, and promotions [22, 12]; professional affiliation, fulfillment, motivation from superior, junior and colleagues, achievement, incentives (pension, allowance, health and hazard insurance, etc.), adequate remuneration and staff [11], reward and recognition, provisions of tools and materials needed for the job, funding [17], conducive work environment, constant electricity and internet availability [23], transportation, policy and guideline.

1.4. HIV Treatment and Care in Niger State

The diagnosis, treatment and follow up care of HIV infection is being done at both the public, private and non-governmental organizations (NGOs), in the rural, semi-urban and urban areas all over the state. There are usually implementing partners (IPs) who are contracted by the do-

nor organizations through whom the funding are disbursed, the IPs use the existing public and private facilities infrastructures, staff to carry out their mandate, with additional staff employed directly by them. The private facilities on the other hand, have a vertical link with the IPs. The IPs supply the commodities and ART drugs, they are also responsible for the staff welfare, training, logistics and supports to the HIV clients.

Majorities of the NGOs focus their activities on the high risks and vulnerable populations in the hotspot areas, and get their supplies and funding directly from their sponsors. The activities of all these stakeholders are under the supervision of the Niger State Agency for the Control of HIV (NGSACA), who report to the National Agency for the Control (NACA) headquarters at the nation capital, Abuja. In 2022, NACA announced an increase in the mother to child transmission in the country (www.punchng.com Feb 2 2022 Vol 46 no 22, 643), and Nigeria having more HIV babies than anywhere in the world; this was reaffirmed by the then country director-general of NACA, and described as unacceptable [24, 25]. In a study among women attending selected hospitals in Minna, the state capital, 18.4% (92/500) were seropositive [26].

Since the onset the pandemic, it had been the HIV patients that have received virtually all the local and international attentions, such that, the challenges faced by the providers are not even inclusive in the international association of provider of AIDS care mandate [27]. Before the HIV pandemic will be brought to a close by 2030 as currently targeted, it is worth assessing the tasks and challenges faced by these front liners in the fight of the epidemic, and clients' viewpoints, and conceptual framework will be developed to highlight the challenges being faced by the HIV providers in Niger state, Nigeria.

2. Method

2.1. Study Design

The design was a facility-based, cross-sectional study; data were collected from selected facilities involved in the conduct of comprehensive HIV services in Niger state.

2.2. Study Setting

Niger state, also called the 'power state' is in the North Central region of Nigeria, the current population is 6,220,619 million, 2022 estimate [28]. The state consists of urban, semi-urban and rural areas, with most of the rural areas difficult to access, and lack of infrastructures. There are many public primary and secondary health facilities across the state, with numerous health posts in the rural areas; similarly, numerous private health facilities are scattered across the state [29]; the geographical location of the state predisposes it to frequent kidnappings, bandit and terrorist invasions.

2.3. Sample Size

The number of respondents interviewed for the studies was based on the Leslie and Kish (1965) formula for sample size calculation, which is suitable for unknown population. The formula is:

$$N = \frac{Z^2 (P) (1-P)}{C^2}$$

Where Z = Standard normal deviation set at 95% confidence at 1.96

P = Proportion of picking a choice or response at 50% = 0.5

C = Absolute error or precision = 0.0562

The total sample size for the providers was 300, and same was calculated for the clients, a 10% non-response was considered for each, thus 330 respondents for HIV providers and 330 for the clients respectively [30].

2.4. Sampling Technique

The sampling frame was all cadres of HIV services providers working in both private and public health facilities across the state. The HIV clients are those accessing services in the same facilities within the study period. A simple randomization sampling method was used to select eligible providers who met the set criteria, which included adults above 18years, working as providers 2 year and above, while the clients must be 18 years above.

2.5. Data Collection

Non-disguised, semi-structured, anonymous questionnaires were used; questions captured included socio-demographic information, the 5 Cs, occupational hazards, the enabling and non-enabling factors. Most of the questions were in Likert scale and a pre-test validity, and reliability check (Cronbach's alpha score of .70 and .89 for providers and client's respectively) were done. The data were collected through the focal contact in each of the facilities, who had been having good rapport with the respondents, and informed consent fully obtained.

2.6. Data Analysis

The data was entered into the IBM-SPSS (IBM statistical product and service solutions) version 23 for the descriptive statistics, and compare of some variables were done using the 2-tailed Pearson's correlation (*r*).

3. Results

3.1. Providers' Perception on Clients' Access to HIV Services

A total of 380 HIV providers' questionnaires were distrib-

uted and 351 analyzed, from public facilities 75%, and private facilities 25% (NGOs inclusive). 43%, and 57% of the respondents' facilities were in the rural, and urban/semi-urban areas respectively. Mean age was 30.50 years ($SD = 8.2$). 58% female, 42% male; educationally, 59% had post-secondary education, 5% no formal education. 80% had background in health-related fields, 20% from non-health. Majority were counselors (52%), lay volunteers (7%); 64% have been working in their respective facilities for 2-5 years, 6-10 years (27%), above 10 years (9%).

3.2. HIV Services

Training: 41% had formal training, respondents disagreed on the adequacy of the training received, ($M = 2.96$, $SD = 1.16$), and the frequency of update in last 24 months ($M = 2.68$, $SD = 1.12$). **Testing:** On reasons clients requested change in HIV positive results to negative; 24% and 27% were for marriages and employments respectively. In trying to evade follow up, 33.9% of clients gave false information regarding their names, age, mobile numbers, etc. 41-60% of the time, 44% of the respondents attended to between 1-30 clients per day. **Counseling:** The providers agreed averagely the fol-

lowing are difficult; youths ($M = 3.09$, $SD = 1.13$), sex workers ($M = 3.15$, $SD = 1.15$), injection drug users (IDU) ($M = 3.12$, $SD = 1.17$), uneducated ($M = 3.10$, $SD = 1.16$), wealthy individuals ($M = 3.13$, $SD = 1.11$), correction center inmates ($M = 3.11$, $SD = 1.06$), LGBTQ ($M = 3.12$, $SD = 1.09$), discordant couples ($M = 3.16$, $SD = 1.07$), internally displaced people (IDP)/homeless individuals ($M = 3.04$, $SD = 1.05$), and people living with disabilities (PWD) ($M = 3.06$, $SD = 1.03$). **Disclosure:** Crying and shouting ($M = 3.19$, $SD = 1.05$), moody and depressive ($M = 3.64$, $SD = 1.14$) and silence ($M = 3.69$, $SD = 1.11$) were the often reactions after HIV positive results. On negative consequences to the clients after disclosure of HIV positive results, divorce, couple separation and intimate partner violence (IPV) were more frequent. **Confidentiality:** Lack of separate room for counseling (46%), top the list of factors that hindered confidentiality, followed by interference by other health workers (35%), HIV co-workers (31%), family members (30%); inadequate lockers (28%), crowded counseling/consulting rooms (28%), lack of curtains/window blinds (26%), caregivers (26%), and lack of doors by (14%). On the possible factors that could hinder clients from accessing HIV services, all the variables examined were agreed upon moderately ("Table 1").

Table 1. Factors Hindering Clients from Accessing HIV Services, the Provider's Views.

Variables	N	M	SD	Conclusion
Fear of HIV poster results	333	3.91	1.04	Challenge
Family members reaction	330	3.74	0.94	Challenge
Stigma and discrimination	330	3.93	1.01	Challenge
Lack of privacy and confidentiality in hospitals	331	3.47	1.10	Challenge
Cultural factors	330	3.17	1.09	Challenge
Religious factors	326	3.10	1.05	Challenge
Hospital staff behaviours	331	3.38	1.04	Challenge
Intimate partner violence	330	3.42	1.08	Challenge
Gender violence	329	3.36	1.07	Challenge

Occupational Hazards: 39% of the providers estimated their risk of contracting HIV as high in the course of duty. About two-third (70%, 76%) of the providers claimed to have been tested for HIV and Hepatitis B virus, less than two-third (66%, 64%) tested for Hepatitis C and Covid-19, while 62%, 57% received vaccination for Hepatitis B and Covid-19 respectively. Majority of the providers were not up to date on the recent events surrounding HIV management, only the injectable treatment, half of the respondents were aware of.

3.3. Enabling and Non-enabling Factors

All the materials being used for testing like gloves, sanitizers, soap, water, face masks, safety boxes, etc., explored were found not to be adequate. Only 32%, and 15% of the respondents reported having health and indemnity insurance respectively, while only 16% have access to functional vehicles in their facilities for community outreaches and home visits. Other enabling factors challenges are detailed in ("Table 2").

Table 2. Challenges of some Enabling Factors.

Variables	N	M	SD	Conclusion
You receive recommendation/recognition as an HIV provider?	325	2.57	0.99	Challenge
Your facility carryout research work on HIV/AIDS?	324	2.69	1.03	Challenge
Your views and opinion are considered in decision making about the job you do?	322	2.98	0.99	Challenge
Attend HIV providers association?	319	2.62	1.16	Challenge
The incentives/Bonus I receive from my employer is adequate?	324	2.63	1.08	Challenge
Participation in activities to cope with the stress of the job?	321	2.80	1.01	Challenge
My current salary is alright?	329	2.44	1.16	Challenge
Constant electricity supply?	322	2.68	1.05	Challenge
Conduct of exit survey for clients?	318	2.53	1.01	Challenge
Obtaining funds for outreaches and other needs?	322	2.49	1.05	Challenge
Usage of electronic medical records?	323	2.78	1.26	Challenge
Quality assurance exercise (Job evaluation)?	314	2.97	1.09	Challenge
Lay volunteers are paid?	320	2.58	1.16	Challenge
You are paid hazard allowance?	322	2.07	1.16	Challenge

On the contrary, some enabling factors were found to be adequate, motivating the providers. Examples were; entrustment by supervisors ($M = 3.05$; $SD = 0.92$), development of new skills ($M = 3.49$, $SD = 1.04$), cordial relationship with colleagues ($M = 3.50$, $SD = 0.94$), and the likelihood of job advancement ($M = 3.49$, $SD = 1.00$). *Non-Enabling factors* identified were burnt-out ($M = 3.01$, $SD = 0.99$); working extra hours ($M = 3.02$; $SD = 0.98$); insecurity ($M = 3.51$; $SD = 1.09$); seeking of job overseas ($M = 3.89$; $SD = 1.06$), among others.

3.4. Clients' Access to HIV Services

380 client questionnaires were distributed, with 366 re-

turned and analyzed giving 96% response rate. Majority of the HIV clients were in the 26-30 (34%), and 31-35 (33%) age group, only 2.8% above 41years. Gender wise, female 54%, 46% male respectively; 27% had no formal education, significant 48% were unemployed. Almost all the responders were diagnosed less than 10 years prior to the study. More than two-third had been attending their facilities for a period less than 10years. 69% attended public facilities; 33% in rural areas, and 67% in semi-urban/urban areas.

Access to HIV Services: Clients' views on factors hindering people from accessing HIV services are as shown in ("Table 3").

Table 3. Factors Hindering Clients from Accessing HIV Services.

Variables	N	M	SD	Conclusion
Fear of HIV Positive Results	362	4.16	0.95	Challenge
Family Members Reaction	365	4.08	0.82	Challenge
Stigma and Discrimination	366	4.11	0.88	Challenge
Lack of Privacy and confidentiality in hospitals	366	3.61	0.85	Challenge
Cultural Factors	364	3.51	0.92	Challenge
Religious factors	366	3.69	1.03	Challenge
Hospital Staff Behaviors	364	3.82	0.91	Challenge
Intimate partner violence	364	4.10	0.85	Challenge

Variables	N	M	SD	Conclusion
Gender violence	363	4.01	0.98	Challenge

Post-religious prayers (90%), and doubt/denial (83%) were top reasons clients kept going for repeat HIV test; on the providers' attitudes, and behaviors to the clients during services delivery, above average of the clients admitted that the providers usually demonstrate the expected positive characteristics, and less judgmental. For possible factors hindering adherence to HIV drugs, and client's reaction to positive results, the responses to the variables explored were similar to the providers. 39% and 27% believed male and female were mostly the initiator of divorce respectively, 43% and 13% have heard of suicide involving women and men respectively. *Consent, Confidentiality and Disclosure:* The frequencies of factors that hinder confidentiality in the facilities were similar to the provider's responses. In circumstances of third-party notification, 62% respondents preferred husband/wives. *Clients Views about Non-Enabling factors, and Enablers:* The clients agreed to the followings: The on-going insecurity situations in the state is affecting the services they were receiving ($M = 3.90$, $SD = 0.88$). Providers can seek employment outside the country in view of the raging insecurity, and bad economic situation in the country ($M = 3.96$, $SD = 0.98$). The Covid-19 pandemic lockdown affected HIV services ($M = 3.89$, $SD = 1.04$). Majority of the clients agreed that the quality of care given by the providers in the past 12 months were adequate ($M = 4.00$, $SD = 0.81$). The clients strongly agreed that improvement of all the factors below will reduce the difficulties of the providers in the course of their work: recognition/recommendation ($M = 4.18$, $SD = 0.89$), extra payment ($M = 4.38$, $SD = 0.78$), health insurance ($M = 4.41$, $SD = 0.75$), hazard allowance ($M = 4.53$, $SD = 0.74$), and more training ($M = 4.52$, $SD = 0.79$). When the variables were subjected to the Pearson correlation coefficient r , there were no significant differences between clients and providers views.

4. Discussion

HIV, an infectious disease started about four decades ago as a novel ailment, later became a pandemic and reverberated all over the world, reached the peak, and now on the decline. The burden of this disease has been borne by the infected individuals, the health system, policy makers and numerous stakeholders. This study was embarked upon to look into the difficult situations of HIV providers, who are the human resources for health in the battles to bring the scourge to an end. The focus was on providers working in Niger state of Nigeria, a LMIC with a significant burden of HIV. The 75% of the respondents working in public facilities showed that compared to advanced countries settings, HIV services are still predominately being offer in government facilities. The ma-

majority of the providers (80%) in this study were from health-related background which is in tandem with the pattern of those involved in the direct care of HIV patients from the onset of the pandemic. Similarly, the mean age of the providers at 30.50 years was a reflection of the young working age characteristic of Sub-Sahara and Africa countries compare to other regions in the world [31].

The pattern of the specific job of the providers in the cascade give support to the principle of task sharing with majority of the providers engaged in more than one task. The adoption of task shifting is suitable in the context of a suppressed economy, high rate of insecurity, and kidnapping of health workers, which had tremendous effect on the availability of health workers in the rural area, where only few are willing to be posted. This can also be a solution to some of the identified challenges from the study in the area of staff shortage, burnt-out, target deadlines; similarly, religion, language barrier, and other socio-cultural challenges can be minimized.

The most difficult group are discordant couples, reasons attributed to this stemmed from the fear of divorce, separation, intimate partner violence, etc., with women mostly affected. Though, there is provision for third-party notification [32], an effective tool when there is prolonged non-disclosure, findings from this study revealed, the providers rarely enforce it ($M = 2.60$, $SD = 1.02$).

Training and retraining of HIV providers is crucial, if the scourge is to be brought to an end in 2030 as being anticipated, the 53% of providers without formal training raise concern about how the task can be accomplished. The lack of adequate and reduced frequency ($M=2.96$, $SD= 1.16$; $M= 2.68$, $SD = 1.12$), had been a recurrent challenge by HIV service providers elsewhere, and denied them access to be effective in the work they do [22, 12]. This lack of up-to-date refresher courses was seen in the knowledge gap demonstrated by the respondents on their respond to occupational hazards, and update on new innovations in HIV care, this gap in knowledge had been obtained in a health system and perceptive of the achievements and challenge of elimination of mother-to-child transmission in Nigeria [23].

In this era of ICT, tele-medicine and artificial intelligence (AI), for the providers to be efficient, the availability of constant internet with data, electronic medical record (EMR), regular electricity supply, functional vehicles for home visit and outreaches are paramount and highly needed, more in the rural areas where the providers travelled distance to render services to the client. The reduced, and unavailability of all these constituted a great setback to the providers morale, frustrating and deprive the providers of the expected satisfaction [22].

The availability of consumables (hand gloves, heavy duty

gloves, sanitizers, soap, water, face masks and safety boxes) have also been found to be below average as in many studies [13, 23, 18], exposing the providers to constant occupational hazards, since their job involved dealing with the client's blood. This lack of supply cannot be surprising in the face of severe naira devaluation, which is the mean of procurement of these items. The problem of health workers remuneration in the country has been a long-standing battle, this had led to multiple industrial actions by the health worker [11, 22, 23], and has negative consequences on HIV clients whose medications are daily and lifelong, to prevent drugs resistance. The effect of all this is the demeanor, lack of performance and morals of the providers.

Recommendation and recognition are factors that can enhance the performance of workers in order to increase productivity, the lack of recognition ($M = 2.57$, $SD = 0.99$). The stigma and discrimination attached to HIV can be adduced as a possible reason, since a similar study has identified the same challenge. Though, the providers were satisfied doing their job ($M = 3.57$, $SD = 0.95$), the satisfaction were actually secondary to the differences they were making in the lives of the clients and not about the remuneration or otherwise. It is however contradictory, that despite these acclaimed fulfillment and satisfaction, more than average were still nursing the likelihood of seeking greener pasture outside the shore of the country ($M = 3.87$, $SD = 1.06$), this is highly distressing and need urgent intervention as it is the order of the day, not only in Niger state, but Nigerian as a whole. The reason for the above cannot be dissociated from the high prevalence of insecurity in the state ($M = 3.51$, $SD = 1.09$), worse is the kidnapping of health workers at their duty post [21]. The physical and psychological trauma, monetary loss, and sometimes loss of lives should be a big concern for all, and not only the service providers.

The Client's Viewpoints: In Nigeria, HIV prevalence has been reported to be highest in the 25-35 age group, this is in agreement with the age group of clients in this study where 67% were in the 26-36 age group, also in agreement with the higher prevalence of female (54.4%) according to UNAIDS. The 30% of singles captured, and 27% with no formal education and high unemployment rate of 48% among the clients can support the argument in favor of premarital testing [33]. Similarly, of concern is the high rate of clients (43%) diagnosed within the last 2-5 years to the time of data collection, this need a closer look since the incidence of HIV is said to be on the decline in Nigerian [5]. If the eradication of HIV is to be made possible in the country this quartile factors will be a detriment to the labor of the providers as evident from both studies.

The clients' above average assessment of the providers on empathy, skill, positive approach, commitment, patience, good knowledge about the job, and low judgmental attitude can be justified the admittance of quality care in the past 12 months, and similar to other study in Ghana [34]. However, this is contrary to some other climes, with clients giving negative reports about the providers [14, 35]. On the critical

side, the high recommendation could have stemmed from fear, in order to continue receiving care, since most are over dependence on the providers, because of the difficult situations caused by the HIV infection, and their precarious health, and the harsh economy situations; the above could also explain the reason why there was no significant difference between the opinion of both when the variables were subjected to Pearson correlation coefficient. The opinion of the clients are in perfect agreement with the providers in the following areas, factors that hindered client from accessing HIV services and adherence, reactions after breaking positive test results, also on barriers against confidentiality in the facilities, and factors that affect the providers satisfaction on the job.

Furthermore, there was strong agreement ($M = 3.90$, $SD = 0.88$) on insecurity as an hindrance the services they were receiving from the providers, support to the providers to seek employment outside the shore of the country without recusing to the few that will be left to render services to them ($M = 3.96$, $SD = 0.98$), this response must have stemmed from the on-going high level of frustration within the country. Similarly, there were strong agreement on training, promotions, increase salary, payment of various allowances accrue to them, and provision of improved HTC centers; more HIV service workers, introduction of home testing and drug delivery, provision of youth friendly services, and more information on HIV as factors that will reduce the difficulties being encountered by the providers.

5. Conclusion and Recommendations

From this study, some of the immediate challenges being faced by the HIV service providers in Niger state have been unmasked, some of which were corroborated by the clients. Formal Training should be made mandatory; refreshers courses for capacity building and skill acquisition should be consistent, sustainable, evidenced-based, with emerging issues on HIV management; updated guidelines to be given to the providers as when due, and demonstration of new equipment. Considering the two-digit inflation rate due to the recent subsidy removal in the country, the welfare, supports of the providers need revisiting to motivate and enable the providers carried out their job with the maximum efficiency; similarly, hazard and training allowance, health and indemnity insurance, pension, job security, and lay volunteers' allowance should be look into. Encouragement to providers to form their professional union and take up courses in public health, infectious diseases and research in order to be relevant during subsequent pandemics and to advocate for their needs. Center coordination, holistic, and a differentiated model of services delivery are advocated, especially in PMTCT to reduce the high burden of babies born with HIV [36]. Institution of exit survey for the clients and quality assurance to assess the services are a must.

Insecurity, which is currently at its peak need urgent government attention in order not to reverse the gain of the re-

duced incidence of HIV in the state. The Asante rency test should be adopted all over the country as a proactive measure to trace new infections and effective counter tracing toward the eradication [37]. *It is high time the Nigerian government at all levels, should take total custodial of HIV management, and make a complete stoppage of reliance on all forms of external donations and aids.*

Limitations

The insecurity situation in the state prolonged the data collection; inability to access severely affected areas with the questionnaires. *For further research*, the opinions and perspectives of key stakeholders, and policy makers in Niger state are crucial toward the eradication goal, thus, need to be examined.

Abbreviations

AIDS: Acquired Immunodeficiency Syndrome
 HIV: Human Immunodeficiency Virus
 LMIC: Low- and Middle Income Countries
 UNAIDS: Joint United Nations Programme on HIV/AIDS

Ethical Approval

Approvals for this research were obtained from the ethical committees of the state agency for the control of HIV/AIDS, the Niger state Ministry of Health, and Centre for Clinical Care and Clinical Research, the current Implementing Partner in the state.

Acknowledgments

Our profound gratitude goes to the HIV providers, who participated in the survey, despite all the security constraint. The deepest appreciation goes to the clients who despite the stigma and discrimination attached to HIV agreed to voluntarily answer the questionnaires.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Coftadeh. (n.d.). *United Nations Office on Drugs and Crime*. HIV and AIDS. <https://www.unodc.org/nigeria/en/hiv-and-aids.html>
- [2] Avert. (2021 April 24). *HIV around the world*. Retrieved February 6, 2022, from <https://www.avert.org/professionals/hiv-around-world>
- [3] Ong, J. J., Nwaozuru, U., Obiezu-Umeh, C., Airhihenbuwa, C., Xian, H., Terris-Prestholt, F., Gbajabiamila, T., Musa, A. Z., Oladele, D., Idigbe, I., David, A., Okwuzu, J., Bamidele, T., Iwelunmor, J., Tucker, J. D., & Ezechi, O. (2021). Designing HIV Testing and Self-Testing Services for Young People in Nigeria: A Discrete Choice Experiment. *Patient*, 14(6), 815–826. <https://doi.org/10.1007/s40271-021-00522-2>
- [4] De Lay, P. R., Benzaken, A., Karim, Q. A., Aliyu, S., Amole, C., Ayala, G., Chalkidou, K., Chang, J., Clayton, M., Couto, A., Dieffenbach, C., Dybul, M., El Sadr, W., Gorgens, M., Low-Ber, D., Mesbah, S., Saveedra, J., Sirinirund, P., Stover, J., ... Hader, S. (2021). Ending AIDS as a public health threat by 2030: Time to reset targets for 2025. *PLoS Medicine*, 18(6), 6–10. <https://doi.org/10.1371/journal.pmed.1003649>
- [5] World Health Organization (December 1st, 2021). *Who director-general's opening remarks for World AIDS Day 2021 - 1 December 2021*. World Health Organization Retrieved January 15, 2022, from <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-for-world-aids-day-2021---1-december-2021>
- [6] Giguère, K., Eaton, J. W., Marsh, K., Johnson, L. F., Johnson, C. C., Ehui, E., Jahn, A., Wanyeki, I., Mbofana, F., Bakiono, F., Mahy, M., & Maheu-Giroux, M. (2021). Trends in knowledge of HIV status and efficiency of HIV testing services in sub-Saharan Africa, 2000–20: A modelling study using survey and HIV testing programme data. *The Lancet HIV*, 8(5). [https://doi.org/10.1016/s2352-3018\(20\)30315-5](https://doi.org/10.1016/s2352-3018(20)30315-5)
- [7] UNAIDS. (n.d.). *Global HIV statistics* - Retrieved February 6, 2022, from https://embargo.unaids.org/static/files/uploaded_files/UNAIDS_2021_FactSheet_en_em.pdf
- [8] UNAIDS *Ghana*. (2022, February 4). Retrieved February 6, 2022, from <https://www.unaids.org/en/regionscountries/countries/ghana>
- [9] U.S. Agency for International Development. (2021, May 13). *Promoting high quality HIV testing and counseling for HIV-positive individuals and linking it to HIV care and treatment*. Retrieved February 26, 2022, from <https://www.usaid.gov/global-health/health-areas/hiv-and-aids/technical-areas/promoting-high-quality-hiv-testing-and>
- [10] WHO. (2015). Pre-test and Post-test services - Consolidated Guidelines on HIV Testing Services - NCBI Bookshelf. <https://www.ncbi.nlm.nih.gov/books/NBK316035/>
- [11] Ngangue, P., Gagnon, M.-P., & Bedard, E. (2017). Challenges in the delivery of public HIV testing and counselling (HTC) in Douala, Cameroon: Providers Perspectives and implications on quality of HTC Services. *BMC International Health and Human Rights*, 17(1). <https://doi.org/10.1186/s12914-017-0118-2>
- [12] Mutabazi, J. C., Gray, C., Muhwava, L., Trottier, H., Ware, L. J., Norris, S., Murphy, K., Levitt, N., & Zarowsky, C. (2020). Integrating the prevention of mother-to-child transmission of HIV into primary healthcare services after AIDS denialism in South Africa: Perspectives of experts and Health Care Workers - A qualitative study. *BMC Health Services Research*, 20(1). <https://doi.org/10.1186/s12913-020-05381-5>

- [13] Meka, A. F., Billong, S. C., Diallo, I., Tiemtore, O. W., Bongwong, B., & Nguefack-Tsague, G. (2020). Challenges and barriers to HIV service uptake and delivery along the HIV Care Cascade in Cameroon. *Pan African Medical Journal*, 36. <https://doi.org/10.11604/pamj.2020.36.37.19046>
- [14] Marwa, R., & Anaeli, A. (2020). Perceived barriers toward provider-initiated HIV testing and Counseling (PITC) in Pediatric Clinics: A qualitative study involving two regional hospitals in Dar-es-Salaam, Tanzania. *HIV/AIDS - Research and Palliative Care, Volume 12*, 141–150. <https://doi.org/10.2147/hiv.s235818>
- [15] Hlongwa, M., Mashamba-Thompson, T., Makhunga, S., Muraraneza, C., & Hlongwana, K. (2020). Men's perspectives on HIV self-testing in sub-Saharan Africa: A systematic review and meta-synthesis. *BMC Public Health*, 20(1). <https://doi.org/10.1186/s12889-020-8184-0>
- [16] Maeri, I., El Ayadi, A., Getahun, M., Charlebois, E., Akatukwasa, C., Tumwebaze, D., Itiakorit, H., Owino, L., Kwarisiima, D., Ssemmondo, E., Sang, N., Kabami, J., Clark, T. D., Petersen, M., Cohen, C. R., Bukusi, E. A., Kanya, M., Havlir, D., & Camlin, C. S. (2016). "How can I tell?" Consequences of HIV status disclosure among couples in eastern African communities in the context of an ongoing HIV "test-and-treat" trial. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, 28(Suppl 3), 59–66. <https://doi.org/10.1080/09540121.2016.1168917>
- [17] Bell, J., Sharma, S., Malone, S., Levy, M., Reast, J., Ciecielag, J., Gogolina, S., Ansons, T., Fourie, S., Braz, R., Little, K., & Hasen, N. (2021). Targeting interventions for HIV testing and treatment uptake: An attitudinal and behavioral segmentation of men aged 20–34 in KwaZulu-Natal and Mpumalanga, South Africa. *PLOS ONE*, 16(3). <https://doi.org/10.1371/journal.pone.0247483>
- [18] Akpuh, N., Ajayi, I. O., Adebowale, A., Idris Suleiman, H., Nguku, P., Dalhat, M., & Adedire, E. (2020, April 6). *Occupational exposure to HIV among healthcare workers in PMTCT sites in Port Harcourt, Nigeria*. BMC public health. Retrieved February 15, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7132882/>
- [19] Ehiri, J. E., Alaofè H. S., Yesufu, V., Balogun, M., Iwelunmor, J., Kram, N. A.-Z., Lott, B. E., & Abosede, O. (2019). AIDS-related stigmatization in the healthcare setting: A study of primary healthcare centers that provide services for prevention of mother-to-child transmission of HIV in Lagos, Nigeria. *BMJ Open*, 9(5). <https://doi.org/10.1136/bmjopen-2018-026322>
- [20] Djiadeu, P., Yusuf, A., Ongolo-Zogo, C., Nguemo, J., Odhiambo, A. J., Mukandoli, C., Lightfoot, D., Mbuagbaw, L., & Nelson, L. R. E. (2020). Barriers in accessing HIV care for Francophone African, Caribbean and black people living with HIV in Canada: A scoping review. *BMJ Open*, 10(8). <https://doi.org/10.1136/bmjopen-2020-036885>
- [21] ReliefWeb. (2022, December 31). *Nigeria: Violence against health care in conflict 2022 - nigeria*. <https://reliefweb.int/report/nigeria/nigeria-violence-against-health-care-conflict-2022>
- [22] Kram, N. A.-Z., Yesufu, V., Lott, B., Palmer, K. N., Balogun, M., & Ehiri, J. (2021). 'Making the most of our situation': A qualitative study reporting health providers' perspectives on the challenges of implementing the prevention of mother-to-child transmission of HIV services in Lagos, Nigeria. *BMJ Open*, 11(10). <https://doi.org/10.1136/bmjopen-2020-046263>
- [23] Olakunde, B. O., Adeyinka, D. A., Olawepo, J. O., Pharr, J. R., Ozigbu, C. E., Wakdok, S., Oladele, T., & Ezeanolue, E. E. (2019). Towards the elimination of mother-to-child transmission of HIV in Nigeria: A Health System perspective of the achievements and challenges. *International Health*, 11(4), 240–249. <https://doi.org/10.1093/inthealth/ihz018>
- [24] NACA Nigeria (n.d.) *home* Retrieved February 5, 2022, from <https://www.naca.gov.ng/history-of-naca/>
- [25] Cohen, J. (2018, June 12). *Nigeria has more HIV-infected babies than anywhere in the world. it's a distinction no country wants*. Home -. Retrieved April 3, 2022, from <https://joncohen.org/2018/06/12/nigeria-has-more-hiv-infected-babies-than-anywhere-in-the-world-its-a-distinction-no-country-wants/>
- [26] Adeoye, R. A., Garba, S. A., Galadima, M., Ossamulu, I. F., & Ariyeloye, S. D. (2019). Prevalence of HIV among women attending selected hospitals in Minna, Niger State, Nigeria. *GSC Biological and Pharmaceutical Sciences*, 9(1), 070–076. <https://doi.org/10.30574/gscbps.2019.9.1.0160>
- [27] IAPAC (n.d.) *Home - International Association of Providers of AIDS Care* Retrieved January 16, 2022, from <https://www.iapac.org/>
- [28] *Africa*. (State, Nigeria) - Population Statistics, Charts, Map and Location. (2023). Assessed September 23, 2023 https://citypopulation.de/en/nigeria/admin/NGA027__niger/
- [29] *Niger State official website*. (n.d.). *About Niger* - Retrieved April 6, 2022, from <https://nigerstate.gov.ng/about-niger/>
- [30] Mensah, Ishmael. (2014). Re: How can we determine the sample size from an unknown population? Retrieved from: <https://www.researchgate.net/post/How-can-we-determine-the-sample-size-from-an-unknown-population/54012a91d3df3ed4388b4567/citation/download>
- [31] Louise Fox, P. M., Caitlin Allen, Z. A., Haroon Bhorat, C. A., Opok, S., Louise Fox, D. K., & Morisset, J. (2022, March 9). *Youth employment in sub-Saharan africa: Progress and prospects*. Brookings. <https://www.brookings.edu/articles/youth-employment-in-sub-saharan-africa-progress-and-prospects/>
- [32] Larki, M., Bahri, N., & Latifnejad Roudsari, R. (2021). Life loaded with threat and vulnerability: A qualitative inquiry into the experiences of HIV negative married women in serodiscordant heterosexual relationships. *BMC Women's Health*, 21(1). <https://doi.org/10.1186/s12905-021-01546-4>
- [33] Noronha, F. S., George, M. V., & Sreedevi. (n.d.). *Mandatory HIV testing: An Indian perspective*. HIV Nursing. Retrieved March 6, 2022, from <https://hivnursing.net/index.php/hiv/article/view/183>

- [34] Dapaah, J. M. (2016). Attitudes and behaviors of health workers and the use of HIV/AIDS health care services. *Nursing Research and Practice*, 2016, 1–9. <https://doi.org/10.1155/2016/5172497>
- [35] Agrawal, A., & Agrawal, A. (2021). Knowledge, attitude and practices among nurses towards HIV/ AIDS patients in Tertiary Care Hospital, Amroha. *International Journal of Medical Science and Diagnosis Research*, 5(2). <https://doi.org/10.32553/ijmsdr.v5i2.755>
- [36] Gbadamosi, S. O., Itanyi, I. U., Menson, W. N., Olawepo, J. O., Bruno, T., Ogidi, A. G., Patel, D. V., Oko, J. O., Onoka, C. A., & Ezeanolue, E. E. (2019). Targeted HIV testing for male partners of HIV-positive pregnant women in a high prevalence setting in Nigeria. *PLOS ONE*, 14(1). <https://doi.org/10.1371/journal.pone.0211022>
- [37] Galiwango, R. M., Ssuuna, C., Kaleebu, P., Kigozi, G., Kagaayi, J., Nakigozi, G., Reynolds, S. J., Lutalo, T., Kankaka, E. N., Wasswa, J. B., Kalibbala, S. N., Kigozi, A. N., Watera, C., Ejang, J., Ndyababo, A., Anok, A. J., Ssemwanga, D., Kibengo, F. M., Quinn, T. C., ... Serwadda, D. (2021). Short communication: Validation of the Asante HIV-1 rapid recency assay for detection of recent HIV-1 infections in Uganda. *AIDS Research and Human Retroviruses*, 37(12), 893–896. <https://doi.org/10.1089/aid.2020.0279>