QUALITY OF CARE

Technical Report

National Agency for the Control of AIDS
Abuja Nigeria

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Foreword

In recent times, attention has been focused on HIV/AIDS service coverage. While it is important, the quality of care provided is equally essential. This quality of care study assessed facilities providing ART and PMTCT services at both primary and secondary levels of healthcare delivery in Nigeria. The distribution of hospitals assessed includes public, private and faith-based facilities covering the range of ownership structures of health institutions in the country.

There is a need to consider relevant perspectives of the providers and clients. This study therefore examined quality of care dimensions including access to services, services appropriateness, effective communication, shared decision making and outcomes of care. In view of appreciating the depth related to quality of care, this study deployed both quantitative and qualitative techniques such that the nuances of providers and clients' opinions were captured and appropriately documented.

The study was conducted in 11 states and the Federal Capital Territory representing all the six geopolitical zones of the country and had sufficient participants to ensure that the outcomes are useful with regards to HIV/AIDS quality of care situation in Nigeria. This ensures that the results of this study are suitable to inform programme planning and implementation in all the geopolitical zones of the country.

The goal of this study is to assess the quality of HIV/AIDS care in health facilities and determine its related factors needed to improve effectiveness of HIV/AIDS service provision in the facilities. This is necessary for optimal performance of our healthcare delivery system. Based on evidence generated from this study, programme implementers and service providers are better informed to tackle issues that will lead to better services and health outcomes.

Therefore, I wish to recommend this study to stakeholders in the government, private sector, civil society and academia for their knowledge and the use of the findings.

Professor John Idoko

Director General

National Agency for the Control of AIDS (NACA)

Acknowledgement

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Our special acknowledgement goes to the Global Fund for funding this study, and for her constant partnership with Nigeria's HIV response to positively impact on the epidemic, and improve access to treatment and care of HIV clients. Our gratitude goes to the Director-General (Professor John Idoko) of NACA for his support to the research team.

NACA wishes to acknowledge the key contributions of the technical facilitators- Dr. Adedayo Adeyemi and Mr Felix-Mary Okpechi; from conception till the finalization of the report. Also, our gratitude goes to the Quality of Care research team (Dr. Kayode Ogungbemi, Dr. Greg Ashefor, Dr. James Anenih, Dr. Ada Anosike, Dr. Ogbonna Amanze, Mr. Ola-Matthews Ojo, Dr Rose Aguolu, Mr. Tosin Adebanjo, Mr. Samuel Udemezue and Mrs. 'Peju Odunlami) whose tireless and relentless work made the study process to be successful. The result of this research will contribute remarkably to the national response and will contribute to existing knowledge on Quality of Care and could influence policy on care of HIV clients across Nigeria.

We cannot but thank the various sectors; State Agencies for the Control of AIDS, Sub-recipients, field data collectors, health facility staff and HIV clients that participated in this study in different sites. We also acknowledge the contributions of Strategic Knowledge Management and Programmes Coordination staff of NACA for their input.

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Executive Summary

Ever since HIV/AIDS was diagnosed in Nigeria, there has been remarkable scale-up of access to provision of HIV services such as anti-retroviral therapy (ART) and prevention of mother to child transmission to HIV (PMTCT). Like in other developing countries, scale-up of HIV services had put additional stress on an already overburdened public health sector; thereby, affecting the quality of care at national and sub-national levels. Quality of care is vital to good clinical outcomes especially in reducing morbidity and mortality. Relationships between HIV service delivery and quality of care need to be better understood. Evidences have shown that utilization of healthcare services is influenced by quality of care.

The goal of this study was to assess quality of ART and PMTCT care in healthcare facilities and determine its related factors needed to improve effectiveness of HIV/AIDS service provision for PLHIVs in the facilities.

This study was conducted in eleven states and the Federal Capital Territory with a sample size of 1212 clients and 157 health service providers. Additionally, the study was conducted in 96 facilities of which 72 (75%) were secondary hospitals and 24 (25%) were primary centres. Questionnaires were administered to elicit information on the quality of care received and given by both the clients and health service providers respectively. Also, qualitative data collection involving key informant interviews was conducted among the health service provider in each of the six geopolitical zones of the country.

The results of the study among clients include female (68.9%), married (67.3%) and Christians (68.2%). About 80.6% of them were in the age range of 25-44 years of which 37.8% had secondary school education and 76% were employed. About 82.4% of the clients commenced ART in the sampled facility and 94.4% of the clients do not visit other facilities for HIV services.

Similarly, among the health service providers, about 89.2% were skilled professionals practicing in the sampled facilities; 93.6% were trained for their responsibilities and 76.4% attended refresher courses. Rating of the working environment of the health facilities by the providers include excellent (11.5%), very good (33.8%), good (45.9%), poor (7.0%) and very poor (1.9%).

From the multivariate analysis, the predictors of perceived quality of care were patients who adhered to hospital appointment with an OR 17.2 95% CI 2.3 to 30.8; providers' punctuality on scheduled clinic days OR 9.9 95%CI 1.5 to 17.7; patients with easily accessible facility OR 3.3 95%CI 1.1 to 10.5; and patients with improvement in CD4 count OR 8.0 95%CI 2.5 to 25.6. The improvement in CD4 was the strongest predictor of quality of care followed by adherence to appointment and easily accessible facility. The least predictor was providers' punctuality on scheduled clinic days.

Therefore, investing in CD4 count as an important laboratory test, educating patients on adherence to hospital appointment, educating health providers on the need for punctuality and improving access and reach to health facilities by scaling up HIV services at the primary healthcare levels will contribute greatly to quality of care in our ART and PMTCT HIV/AIDS services delivery programmes.

Chapter 1: Introduction

1.1 Background

Human Immuno-deficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) remains a major public health problem in Sub Saharan Africa including Nigeria. Over the past two decades, Nigeria has been committed to HIV/AIDS response at national and local levels, with international donor agencies providing majority of financial resources to mitigate the impact of HIV epidemic. Importantly, there has been rapid scale-up of HIV/AIDS services which has led to an increase in the number of service delivery outlets as a result of donor supported health system strengthening efforts, and increased access to HIV/AIDS services by people living with HIV (PLHIVs) from 51,000 in 2005 to 639,000 in 2013 (NHEIA, 2014). This has dramatically reduced HIV-related morbidity and mortality (NHEIA, 2014). Despite the scale-up of ART services, a large proportion of HIV transmission occurs from mothers to children during pregnancy, labor and delivery. From the Spectrum estimate, mother to child transmission of HIV increased from 24.5% in 2011 to 27.3% in 2013 (GARPR, 2013). With Government commitment to increase the number of people on treatment in a large scale-up programme despite limited resources, there is a need to assess quality of care with the opportunity offered by availability of medication, availability of HIV/AIDS Policy including the National Strategic Plan, and availability of legislative support with bills against stigma and discrimination.

Moreover, in order to improve efficiency in HIV/AIDS scale-up of services, it is important to assess quality of HIV/AIDS care from patients and their service providers for optimal patients' satisfaction towards achieving the universal access in HIV/AIDS prevention and treatment, and to guide future scale-up programmes. Understanding their perception on quality of care with respect to their expectations and concerns in the context of their environment and culture is vital for improved HIV programming in Nigeria.

HIV/AIDS services are rendered at various tiers of healthcare delivery in Nigeria: Primary Healthcare Centres (PHCs), Secondary Healthcare Centres (SHCs) and Tertiary Healthcare Centres (THCs). It has been observed that scaling up access to anti-retroviral therapy (ART) provision for treatment, care and support in developing countries had put additional stress on an already overburdened public health sector. This health sector stress leads to concerns in quality of care. Such quality concerns include level of provider training, prescribing standards, regular testing and monitoring of HIV patients, adequate counselling on prevention, and appropriate management of opportunistic infections (Osungbade et.al, 2013). Other quality concerns include: delayed access to services; suboptimal adherence; low retention rate; and poor outcomes of ART (Bach Xuan, 2012). Evidence has shown that poor quality of care is one of the most common reasons why clients would not use available health services. Perceived quality of service was the most important factor which influenced the choice of facility and utilization of service (Iyaniwura and Yusuf, 2009). Additionally, inefficient clinical and administrative management, and inadequate trained staff in the health facilities have continued to significantly account for the gaps in HIV/AIDS service coverage and quality of care. If patients are dissatisfied with the quality of care they receive, they may not adhere to treatment regimen, or they may fail to attend follow-up visits (Heunis, et al. 2008).

In another study, weak performance monitoring systems and non-empowered patients and families (due to poor education) were contributory factors to healthcare quality problems in a low–income country like Nigeria (Counte, 2007). Furthermore, evidence has shown that the quality of healthcare service has a positive correlation with outcomes of health programmes being offered to any population, particularly for patients with HIV infection. Obtaining medical services and treatment for patients with HIV infection may lead to longer survival and better quality of life (Mullen, 2014).

As a matter of fact, more evidences are needed to assess if scaling-up of HIV services translates to improved quality of care. In the absence of high quality service delivery, efficiency and effectiveness in service provision will be compromised. Therefore, quality of care is crucial to essential service provision in health system strengthening.

The imperatives of assessing and improving the quality of HIV/AIDS services in Nigeria prompted the Global Fund (GF) to conceptualise the Rapid Services Quality Assessment (RSQA) in 2013. The main objective was to assess the extent to which services and procedures are implemented according to nationally recognized and evidence-based technical policies and guidelines as well as meet the needs and expectations of PLHIV. The assessment also aimed at identifying gaps in quality of HIV services delivered at GF-supported facilities and to use the identified gaps as basis for designing quality improvement processes and activities for HIV services. Despite this assessment, there is a need for an elaborate study that will assess quality of care from both the clients and providers' perspectives.

To this end, results from this study will provide guidance to the development of strategies and interventions aimed at improving quality of care among PLHIVs in Nigeria.

1.2 Perspectives on Quality Assessment

Avedis Donabedian was one of the foremost authors who focused attention on the imperative of examining healthcare quality from different perspectives (Donabedian, 1980, Counte, 2007). There are three major perspectives in the assessment of quality of healthcare:

- **Practitioners Perspective:** This perspective is concerned with technical knowledge, interpersonal skills and amenities of care. Health care practitioners, as a result of their education and professional training, are more attuned to factors such as signs of measurable clinical improvement, when they view the issue of healthcare quality.
- **Patient Perspective:** This perspective is concerned with patients' experience versus their expectations. Since patients are likely to have less medical knowledge, they are more attuned to whether the conduct and behavior of health care professionals is in keeping with their expectations (which are major component of patient satisfaction) and whether their symptoms and daily role capacities have improved. Patient satisfaction has been defined as the patient's "personal evaluation of providers' ability of health care services", and reflects providers' ability to successfully deliver health care that is in keeping with the patient's expectations and needs (Kagashe and Rwebanila, 2011). Also, Safran et al discovered from their study that patients' perception of their healthcare provider as having "whole personal knowledge" is one

of the strongest predictors of adherence in primary care setting (Safran, 1998). Similarly, Beach, Keruly, and Moore (2006) were of the view that patient perception of being known "as a person" is significantly correlated with adherence to HAART and better health outcomes among PLHIV. Furthermore, patient satisfaction has gained extensive recognition as an important indicator of quality of care (Tsasis, Tsoukas, and Deutsch, 2000). Consequently, patient satisfaction with health care mirrors the quality of services from patients' perspective that supplements traditional indicators such as survival outcomes and processes of care (Crane et al., 2007)

- **Community Perspective:** This perspective has to do with access to care, technical performance, and monetary costs- i.e. whether individuals can actually access available services and out-of-pocket monetary costs.

Patients' and Practitioners' perspectives on the quality of ART and PMTCT care were the major focus of this study.

1.3 Essential Elements/Dimensions of High Quality Health Care

Lohr (1990) and Blumenthal (1996) addressed a spectrum of quality attributes from different viewpoints, which essentially include the following:

- **Appropriate services**: These entail the provision of timely and technically competent (efficiency of care-) services (in terms of equipment and staffing level) to the patients/community. It also encompasses 'doing what works (appropriateness of care) and 'doing well what works' (execution of care).
- **Access to services**: Health care services should be very accessible to the patients and to the community.
- **Effective Communication**: This refers to purposeful and result-oriented communication between clinicians (healthcare providers) and their patients and families. Many qualitative studies and editorials have shown that effective patient-physician relationships and communication could enhance adherence to HAART for PLHIV- as strict adherence to HAART is a sine qua non to averting drug resistance, deterioration in the patient's condition and death (Beach, Keruly, and Moore, 2006).
- **Shared Decision Making**: This entails the involvement of the patient and his/her family in decisions regarding his/her management.

- **Cultural Sensitivity**: This has to do with issues like privacy, dignity in care, and care/services being congruent with the cultural values of the patients and their communities- i.e. social acceptability.
- **Equity**: Refers to fairness in the delivery of care.
- **Efficiency and Economy**: This is concerned with workload and unit cost comparisons with other modalities of rendering the services/care.

1.4 Quality of Care Indicators

According to Campbell *et al*., (2003) and Counte (2007), in considering quality of care assessment, it is advisable to decide which aspects of care quality to assess:

1. **Structures:** These refer to the characteristics of the setting(s) in which care occurs, and includes factors like material resources (facilities, equipment); human resources (staffing level and qualifications); and organizational structure (medical staff organization and level of compensation).
2. **Processes:** These imply the things actually done during the care process, such as aspects of the encounter with the patient; patient's activities in seeking out care and complying with prescriptions; and healthcare practitioners' diagnostic and treatment activities.
3. **Outcome:** This refers to the effects of care on the health status of individual patients and populations, and includes changes in patient's health status (morbidity and mortality) and patient's perceptions and preferences.

Goal of Study

To assess quality of ART and PMTCT care in health care facilities and determine quality related issues that could improve the quality of ART and PMTCT services being provided to PLHIVs in Nigeria.

Primary Objective

To determine factors affecting the quality of ART and PMTCT services being provided to HIV clients in health care facilities.

Secondary Objectives

- To ascertain client satisfaction with ART and PMTCT services at the health care facilities.
- To identify clients' perspective on the quality of ART and PMTCT care related services received at healthcare facilities.
- To determine the extent to which providers of ART and PMTCT services are complying with ART and PMTCT quality of care standards for PLHIV at health care facilities.
- To assess the determinants of perceived improved health status among HIV clients
- To elicit quality of ART and PMTCT issues at health facilities that could contribute to policy, planning and, implementation of quality improvement measures

Study Questions:

- What are the factors that influence patients' satisfaction and perceived quality of ART and PMTCT care at health care facilities?
- To what extent are providers of ART and PMTCT complying with ART and PMTCT quality of care standards for PLHIV at health care facilities?
- What are the determinants of client perceived improvement in health status?
- What are the issues at health care facilities that could inform policy for improving the quality of HIV/AIDS care in Nigeria?

Chapter 2: Literature Review

2.1. Introduction

Over the past two decades, the rapid expansion of antiretroviral treatment (ART) in Africa has dramatically reduced HIV-related morbidity and mortality, and transformed HIV into a chronic illness (Bach Xuan Tran et.al, 2012). The introduction of ART services in Nigeria has significantly impacted positively on the overall wellbeing of PLHIVs (Nwabueze et.al, 2010). In 2004, expanding access to treatment through free antiretroviral therapy (ART) was adopted as one of the measures which could extend and improve the quality of lives of people living with HIV especially in low- and middle-income countries (Osungbade et.al, 2013). People living with HIV/AIDS (PLHIV) while availing anti-retroviral therapy (ART) services face administrative and procedural problems in hospitals which affect their level of satisfaction with HIV/AIDS services (Devnani et.al, 2012). It remains a challenge to achieve the universal access target and ensure the quality of HIV/AIDS care and treatment services in many low-income countries that are hardest hit by the HIV epidemic (Reda et.al, 2012). Delayed access, suboptimal adherence, low retention rate, and poor outcomes of ART have been observed in these settings (Bach Xuan Tran et.al, 2012).

The International Organization for Standardization (ISO) defines quality as "the totality of features and characteristics of an entity that bears on its ability to satisfy a stated or implied need (WHO, 2004). "Quality health care" could be defined as the production of improved health and satisfaction of a population with the limitations of existing technology, resources,

and consumer circumstances (Palmer, 1991). The Institute of Medicine defined health care quality as the degree/extent to which health services provided for individuals and populations increase the likelihood of desired outcomes and are consistent with professional knowledge (IoM, 2001). This definition of quality of care has been used extensively in the context of healthcare including HIV/AIDS care as it places deserved emphasis on both individual and population health, connects healthcare services (and their constituent processes) with desired health outcomes, and concentrates upon the gap between current versus desired practices or standards (Counte, 2007).

Quality study in healthcare is the methodical assessment of healthcare or service based on reliable evidence (Maxwell, 1984). The concept of quality is one of the leading forces in improving health services (WHO,2004).

The quality of service of health care has a relationship with the outcomes of health programmes being offered to any population. Scale-up of HIV programmes including increasing the number of people on treatment based on CD4 count of ≤350cells/mm3 has put additional stress on our healthcare system which may have effect on the quality of care from the clients and providers' perspectives.

In assessing quality of health care services (HIV/AIDS inclusive), some studies conducted have examined quality of care from various perspectives, for example Practitioners' perspective, Patients' perspective and Community perspective. In a related study examining patients satisfaction in a specialized HIV/AIDS Care Unit, they found out that the overall satisfaction of quality of HIV/AIDS care is mainly a function of the patient's perception of his/her health status, extent of family and professional support, and the degree to which the patient is involved in treatment and care decisions (Tsasis et. al, 2000). Therefore, the quality of care and patient satisfaction underpin the success of public health policies in enhancing access to care, especially for policies targeted at promoting access to ART (Harounan Kazianga et al, 2008).

2.2. Patient satisfaction with HIV services at various health care facilities.

Patient satisfaction has been defined as the patient's "personal evaluation of providers' ability of health care services", and reflects provider's ability to successfully deliver care in line with

the patient's expectations and needs (Kagashe et.al, 2011). Patient satisfaction has become an important performance measure and outcome of healthcare (Harounan Kazianga et al, 2008).

A study conducted in Vietnam showed that the percentage of respondents completely satisfied with overall HIV/AIDS service quality and treatment outcomes were 42.4% and 18.8% respectively (Bach Xuan Tran, 2012). A study conducted in India among HIV/AIDS clients showed that 88% of clients rated satisfaction level as satisfactory or above while 30% as very satisfactory, 58% satisfactory, 10% indifferent and 2% dissatisfied (Devnani et.al, 2012). Similarly, another study conducted in Anambra state Nigeria observed that patients visiting the tertiary health facility were more satisfied with access to care than those visiting the secondary health facility and the difference was statistically significant ($p<0.021$). In all, the study demonstrated high patients' satisfaction with the quality of care they receive at both facilities (Nwabueze et.al, 2010). Another study conducted in Nigeria showed that mean satisfaction scores of patients who attended public health facility were higher in more domains than scores of patients who attended private health facility (Osungbade et. al, 2013).

Also, in a similar study on clients' satisfaction with anti-retroviral therapy services in a tertiary hospital in Sokoto Nigeria, findings showed that generally the respondents were satisfied with most of the services rendered in the hospital. The respondents were only dissatisfied with only three components of the hospital's services: home visits, the adherence unit, and drugs availability (Oche et. al, 2013).

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2.3. Patients' perspective on the quality of HIV/AIDS care issues received at healthcare facilities

A study conducted in Nigeria showed that mean satisfaction scores of patients for technical quality of services provided, interpersonal manner, communication and time spent with doctor domains was higher for public health facilities compared to private health facilities (Osungbade et. al, 2013). In two domains, that is financial aspects of care and accessibility/availability/convenience to reach health facility, the mean satisfaction scores of patients who attended a private health facility were higher than scores of patients who attended a public health facility (Osungbade et. al, 2013).

Another study in Anambra state Nigeria reported that tertiary health facility patients also considered the services received from the doctors as the most satisfactory compared to other service points in the facility. On the other hand, their secondary health facility counterparts were most satisfied with the adherence counseling, when compared to other service points. Patients visiting the tertiary health facility were more satisfied with access to care than those visiting the secondary health facility and the difference was statistically significant ($p<0.021$) (Nwabueze et.al, 2011). HIV/AIDS patients accessing HIV/AIDS services in secondary health facilities were more satisfied with services rendered by laboratory, pharmacy, adherence counseling and other staff than the tertiary facility patients (Nwabueze et.al, 2010).

A study in India showed that factors found to be associated with high satisfaction level of clients were patient-provider interaction ($p=0.002$), behaviour of staff ($p=0.005$), physical facilities ($p=0.005$), cleanliness (0.002), drinking water (0.006), confidentiality ($p=0.004$), waiting time to meet the doctor ($p=0.03$) and total time spent in hospital ($p < 0.001$) (Devnani et.al, 2012).

Additionally, a study conducted among Vietnamese HIV/AIDS clients showed that more than 50% of clients were completely satisfied with:

- Confidentiality and respects of patients' privacy (60.1%)
- Competence of HCWs (52.6%)
- Consultation, explanation and guidance of HCWs (52.5%)
- Responsiveness of the HCWs to patients' questions and requests (51.4%) (Bach Xuan Tran, 2012).

Chapter 3: Methodology

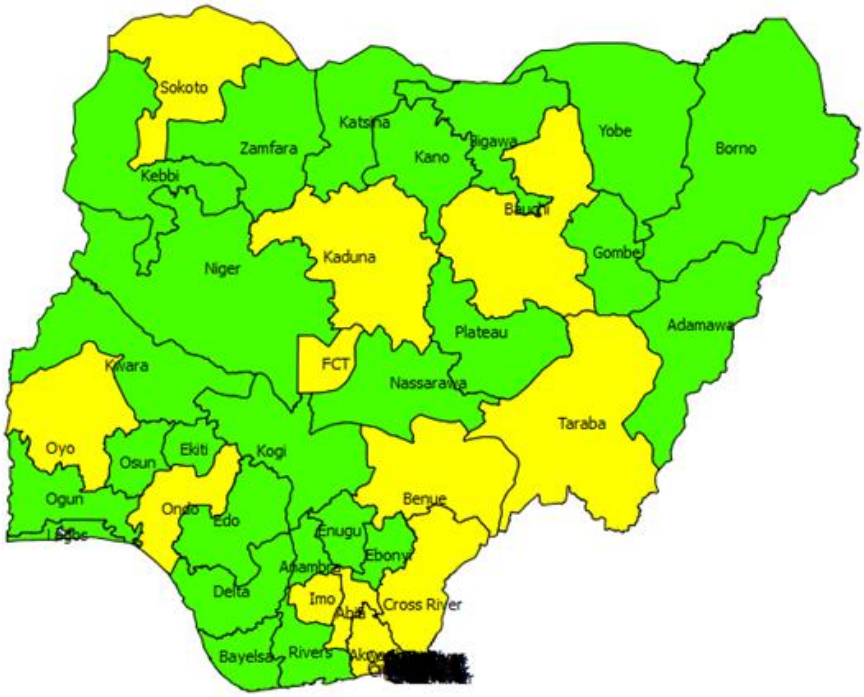
In order to accomplish the goal and objectives of this study, a desk review of all available and relevant documents was carried out. Existing related and relevant literatures (published and unpublished) on quality of healthcare and previous assessment in quality of health services with focus on HIV/AIDS care in Nigeria and other countries were systematically reviewed and extracted. Also, databases including District Health Information System (DHIS) 2.0 were reviewed for Global Fund, PEPFAR and Government of Nigeria funded secondary facilities to determine the number of clients in the health facilities that were offering ART and PMTCT services across the country. This was needed for inclusion in the sampling frame. Health facilities that had less than 500 clients for ART and 50 clients for PMTCT were excluded from selection. Primary and secondary hospitals were selected for the study. The hospital contacts of the selected facilities were reached prior to the commencement of the study at the selected facilities.

Study Area:

The study was conducted in 11 states and the Federal Capital Territory. Two states were randomly selected from each of the six geopolitical zones of Nigeria from the states with a

high burden of HIV. States with conflicts or terrorism were excluded from the random selection. The selected states include Cross River, Akwa Ibom, (South South); Ondo, Oyo (South West); Taraba, Bauchi(North East); Sokoto, Kaduna(North West); Benue, FCT (North Central);Imo and Abia (South East)

Figure 1:



This is a map of Nigeria with the study states highlighted in yellow color

Sample Size:

To ensure that the sample size was sufficiently large enough to estimate the quality of care given and received in ART and PMTCT services, a minimum sample size of 1212 respondents

was estimated at a confidence level of 95%, statistical power of 80% and adjusted for 2.5% non-response rate. Approximately, 100 patients were targeted in each state and the FCT. Similarly, the number of health providers that were selected for the study was 157.

Study Population/participants:

The study population was 1212 people living with HIV/AIDS (both male and female) that were receiving ART and PMTCT services in the selected primary and secondary heath facilities. Quantitative data were collected using interviewer administered questionnaire from randomly selected HIV positive clients from each of the selected facilities in the 11 + 1 states of the six geo-political zones of Nigeria. Additionally, quantitative data were collected using interviewer administered questionnaire among 157 health providers (ART and PMTCT coordinators) based on HIV services being delivered in the sampled health facilities, in terms of their administrative and clinical processes of care. Also, six key informant interviews were conducted among six healthcare providers in each of the six geopolitical zones. Additionally, eight facilities were selected in each of the states.

Inclusion criteria for clients include:

i) Patients who are HIV positive

ii) Prior use of the facility by the patient or previous access to HIV services

iii) Minimum of two visits for HIV related services in the facility

Exclusion criteria for clients include:

i) Patients who are severely/mentally ill
ii) Patients who were not HIV positive
iii) Hospitals that had less than 500 clients for ART and 50 clients for PMTCT

Inclusion Criteria for Care Providers include:

Head of the ART/PMTCT unit and/or their deputies who have spent at least one year in the facility providing the HIV/AIDS services (where unavailable, the most experienced HIV service provider was interviewed)

Exclusion Criteria for Care Providers include:

Providers who refused to give consent to be interviewed.

Sampling technique:

A multi-stage random sampling method was used for this study. The steps involved are:

Steps	Sampling technique	Sample frame	Sampled unit selected
1	Stratified sampling	Nigeria	6 geopolitical zones
2	Simple random sampling	Geopolitical zone	2 States per zone based on HIV prevalence and security situation
3	Simple random sampling	State	4 Local Government Areas
4	Stratified sampling	Lists of eligible primary and secondary facilities in the selected 4 LGAs	Facilities
5	Systematic sampling	Lists of eligible primary and secondary facilities in four LGAs	6 secondary facilities and 2 primary facilities
6	Simple random sampling	Health facility	Patients and Care Providers (Study respondents)

Study Design

This study employed a mixed method involving both quantitative and qualitative data collection. The quantitative data collection was a cross sectional design. The qualitative data collection involved key informant interviews among the healthcare providers only.

Study tools

1) Client or patient Questionnaire

2) Health Provider Questionnaire

3) Key Informant Interview Guide

The quantitative tools used for this study were questionnaires on quality of HIV services received from the patients' perspective and quality of HIV services given from the health providers' perspective.

The clients' perspective questionnaire comprised the following sections: socio-demographic characteristics; HIV/AIDS service utilization history; elements of quality of care; outcome of care; information on facility infrastructures; organizational concern for patient's satisfaction; counselling and testing; regimen compliance and counselling; waiting time; cost of care; and staff attitude.

The health providers' perspective questionnaire was divided into sections. The questionnaire addressed the elements of quality of HIV/AIDS care with regards to the type of service being provided to the clients. The sections were: information about the health care facility; information about the health provider; services provided; staffing; availability of adequate and skilled staff that are knowledgeable in HIV/AIDS services; infrastructure/equipment; process of care; compliance with national guidelines; outcome of care; confidentiality; and organizational concern for patient satisfaction.

Key informant interviews were conducted among health providers to understand their perspectives on quality of care of HIV/AIDS services in their facilities. Information required from them also included up-to-date refresher trainings, extent of adherence to the National HIV guidelines and standard procedures for treating ART and PMTCT clients, availability of ARVs, necessary laboratory equipment, and general state of the facility.

Recruitment of field workers: The field workers recruited were six supervisors (one in each of the geopolitical zones), and 24 data collectors (two per state).

Training of Data collectors:

Training of data collectors and supervisors was conducted. The training involved introduction to the study tools, the study protocol (including the sampling strategy), how to conduct

interview and how to ensure quality data were collected as well as logistic arrangements for the field work.

Pre-testing of study tools:

All the tools were pre-tested within the FCT in facilities not selected for this study. The facilities were purposively selected. Both patients and providers were conveniently selected. Based on the outcome of the pre-test, the tools were reviewed and edited.

Data Collection Procedure

The trained data collectors/interviewers obtained informed consent from each of the respondents before commencing the administration of the questionnaire or interview. Data were collected through interviewer administered questionnaires and KII. Data collected were cross-checked daily for completeness and accuracy. The qualitative data collection involved the use of audio tape recorder and notes to capture elicited information from the health providers.

Data Entry and Analysis:

The quantitative data collected were checked manually for errors from the questionnaires. Data were entered into Statistical Package for Social Sciences (SPSS) version 21 and converted to Stata 12.0 Special Edition. Data cleaning and analysis were undertaken with Stata 12.0. During data cleaning procedure, frequency tables were done to ascertain data correctness and completeness. In cases where strange values were discovered in the data quality analysis, questionnaires were re-checked for possible entry errors. Analysis was done based on the objectives of the study and frequency tables were constructed.

The univariate analysis was done using mean or median for continuous variables, and percentages for categorical variables. Additionally, findings were represented using tables and graphs. Complete case analysis was done.

Bivariate analysis was done using chi square test or Fisher's exact test for categorical variables, and complete case analysis was done. The level of significance was <0.05.

The multivariate analysis involved the use of multiple logistic regression models with patients' perceived outcome of care as the dependent variable.

- *Model Building*

Forward-stepwise selection method was used for model building by adding study variables one at a time to the model. Sex and age category were kept fixed in the model selection. Variables with p-value of 0.2 or less (from the bivariate analysis) were included in the multiple logistic regression models during the model building. The level of significance was <0.05. Akaike information criterion (AIC), Bayesian information criterion (BIC) and Receiver operating characteristic (ROC) curve were used in the selection of the models. Model with the least values of AIC and BIC, and highest value of area under the curve for ROC was selected as the best model.

Variables in Model 1: Age Category; Sex; Reason for Facility Use – Closeness; Length of HIV Diagnosis; Information Confidentiality; Adherence to Appointment; Adherence Support; Providers' Punctuality on Clinic Days; Ease of Facility Accessibility; and Improvement in CD4 Count.

Variables in Model 2: Age Category; Sex; Reason for Facility Use– Closeness; Information Confidentiality; Adherence to Appointment; Adherence Support; Providers' Punctuality on Clinic Days; Ease of Facility Accessibility; and Improvement in CD4 Count

- *Model Evaluation*

This was undertaken on the selected model to ascertain how the independent variables were able to predict the outcome of care. This model diagnosis involved the use of multi-collinearity check using tolerance and variance inflation factor, Hosmer-Lemeshow goodness of fit using the chi square value and its p-value, and model specification using linear predicted value and linear predicted value squared. The outcome of this evaluation is contained in chapter four.

For the qualitative component (KII) of this study, one respondent was selected in each of the six geopolitical zones. Data were manually managed using descriptive content analysis. Content analysis entails establishing categories and counting the frequencies of such categories in the given text (Silverman, 2011). 'Category' refers to a group of words (or phrases) which have common meanings; while 'themes' means group of words with different meanings, but when taken together imply the same issue (Weber, 1983, Parahoo, 2006).

Analysis of the qualitative component of this study essentially made use of Colaizzi framework (Colaizzi (1978, Parahoo, 2006). The framework entailed the following steps: the interview recordings were transcribed verbatim; important statements were identified from the responses of each respondent; meanings were formulated from the important statements; the formulated meanings were then arranged into themes; and the results were then described as the perspectives of the respondents on quality of care for PLHIV and issues affecting quality of HIV/AIDS care in Nigeria.

Ethical Approval

The ethical approval was obtained from FCT ethical review board. Written and verbal informed consents were obtained from the participants after explaining the purpose of the study. Confidentiality was maintained in the study and no patient name was used but rather identification number.

Chapter 4: Results

Clients Univariate Findings

Table 1a: Distribution of Respondents by Demographics of Health Facility

Variable	Frequency	Percentage
Type of Health Facility of the Clients(N=1212)		
Primary	114	9.4
Secondary	1098	90.6
Nature of Health Facility of the Clients (N= 1203)		
Faith-based	211	17.5
Private for profit	59	4.9
Public	933	77.6

Table 1a on the distribution of respondents by type of health facility shows that majority (90.6%) of the clients for this study were receiving care from secondary health facilities; with

only 9.4 per cent of them accessing care at primary facilities. Furthermore, among the various health facilities, more than three-thirds (77.6%) of the clients for this study were receiving care from public health facilities, followed by 17.5% of clients who received care from faith-based health facilities. . However, only 4.9% of clients in this study were receiving care from private for profit owned health facilities. Pictorial description is provided in Figure 2.

Figure 2: Chart showing Health Facility Distribution

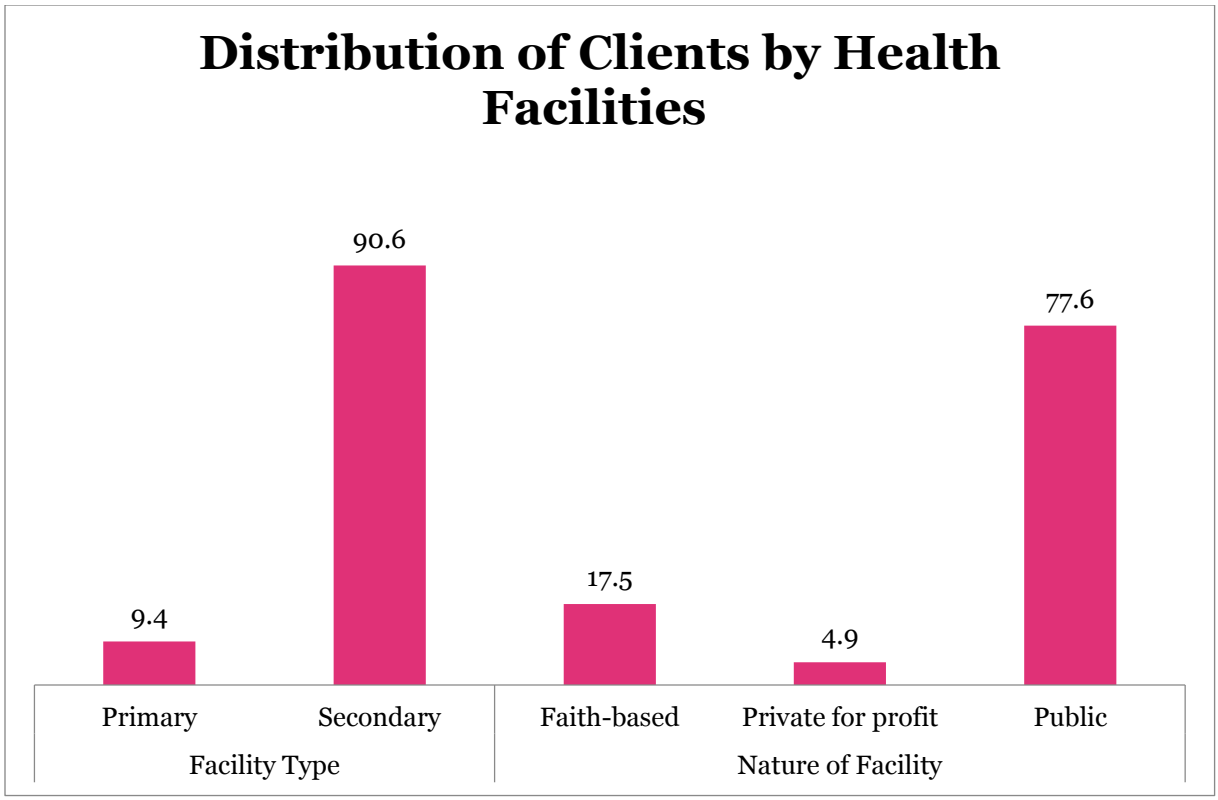


Table 1b: Distribution of Respondents by Socio-Demographic Characteristics

Variable	Frequency	Percentage
Sex (N= 1212)		
Male	376	31.1
Female	836	68.9
Age Group (N= 1211)		
15-19	20	1.7
20-24	92	7.6
25-29	216	17.8
30-34	271	22.4
35-39	234	19.3
40-44	163	13.5
45-49	109	9.0
50+	106	8.8
Marital Status (N= 1203)		
Single	215	17.9
Married	810	67.3
Separated	54	4.5
Divorced	42	3.5
Widowed	82	6.8
Religion (N= 1190)		
Christian	811	68.2
Muslim	363	30.5
Traditional	10	0.8
Others	6	0.5
Place of Residence (N= 1160)		
Urban	576	49.7
Rural	584	50.3

Educational Attainment(N= 1180)		
None	130	11.0
Qur'anic	114	9.7
Primary	259	21.9
Secondary	446	37.8
Tertiary	231	19.6
Ethnicity (N= 1014)		
Yoruba	186	18.3
Igbo	247	24.4
Hausa	200	19.7
Others	380	37.5
Employment status(N=1193)		
Employed	907	76.0
Unemployed	286	23.9
Occupation(N=1049)		
Artisan	86	8.2
Trader	315	30.0
Business man	142	13.5
Farmer	131	12.5
Housewife	148	14.1
Public Servant	170	16.2
Others	57	5.4
Monthly Income (N= 1212)		
200-10,000		45.6
11,000-99,000	431	32.9
100,000-199,000	399	1.4
200,000-299,000	17	0.5
300,000+	6	29.6
	359	

Findings from Table 1b shows that a high proportion (68.9%) of clients in this study was female compared with only 31.1 per cent male counterparts. Their age distribution depicts that most (41.7%) were in their thirties with 25.4 per cent in their twenties, while 22.5 per cent fall within 40-49 years at the time of the study. However, only 1.7 per cent of the clients were aged 15-19 years old. More than three-fifth (67.3%) of them were married while 17.9 per cent were single, 4.5 per cent separated and 3.5 per cent divorced. The place of residence as observed indicates that a little above half (50.3%) live in urban centres. Furthermore, an enquiry on their educational attainment revealed that only 11.0 per cent of the clients had never attended school. Majority (37.5%) of them completed secondary education while 21.9 per cent and 19.6 per cent completed to the level of primary and tertiary education respectively. Most (76.1%) of the clients were employed at the time of the study while 23.9 per cent were not. Major type of occupation was trading (30.0%), while 16.2 per cent of them are employed as public servants and 14.1 per cent reported they were just housewives. A higher proportion (45.6%) of the clients' indicated that their monthly income was not more than ten thousand Naira (₦10,000.00), with 32.9 per cent reporting to have between ₦11,000.00 and ₦99,000.00

Table 2: Distribution of Respondents by Background Information on HIV Status

Variable	Frequency	Percentage
***Duration of HIV diagnosis (months)(N= 1200)**		
Less than 36 months	660	55.0
36 months and above	540	45.0
***Duration of ART eligibility (months)(N= 1158)**		
Less than 36 months	696	60.1
36 months and above	462	39.9
Did you first commence ART in this facility? (N= 1162)		
Yes	958	82.4
No	204	17.6

In Table 2 more than half (55.0%) of the respondents were those whose duration of HIV diagnosis was less than 36 months; while 45 per cent of them reported to have had their HIV status diagnosed for more than 36 months. A little above two-thirds (60.1%) of the clients noted that they became eligible for ART in less than 36 months. However, 39.9 per cent of them became eligible for ART at 36 months or more. Among the studied population, findings also revealed that a high proportion (82.4%) of them commenced their ART in their respective present facilities. The commencement of ART at their study facilities is shown in the pie chart in Fig. 3.

Figure 3: Chart of Client Who Started Reception of ART in Present Facility

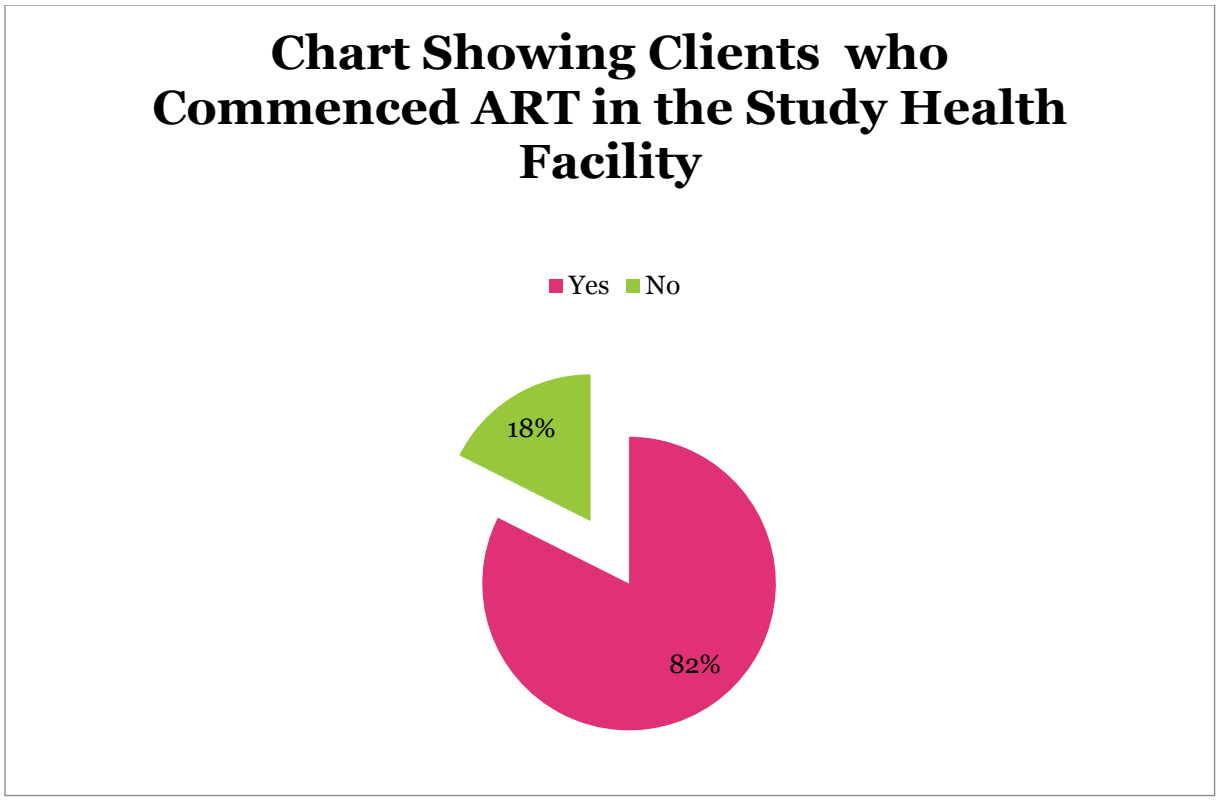


Figure 3 shows that 18% of the clients commenced ART in their previous health facility; while 82% commenced treatment in their current health facility.

Table 3: Distribution of Respondents by Client's Assessment of Facility and Care

Variable	Frequency	Percentage
Client visits any other facility apart this for HIV services (N= 1043)		
Yes	48	4.6
No	995	94.4
If yes, state reasons (N=48)		
To get a second opinion on my health	9	18.8
When I travel out of this state	39	81.2
Frequency of scheduled appointments in this facility? (N=1170)		
Once a week	77	6.6
Once a month	559	47.8
Every 3 months	491	41.9
Every 6 months	41	3.5
Once a year	2	0.2
Rating of care received in this facility (N=1186)		
Very satisfied	815	68.7
Somewhat satisfied	256	21.6
Neutral	77	6.5

Somewhat dissatisfied	14	1.2
Very dissatisfied	18	1.5
Not sure	6	0.5
Facility has appropriate and adequate equipment to effectively carry out HIV services? (N=1164)		
Yes	1073	92.2
No	91	7.8
Facility clean at all times of visit (N=1205)		
Yes	1168	96.9
No	37	3.1
Rooms/departments are clearly sign-posted (N=1195)		
Yes	1099	91.9
No	96	8.0
Functional toilet facilities exist (N=1168)		
Yes	991	84.9
No	177	15.2
Availability of regular power supply (N=1185)		
Yes	619	52.2
No	566	47.7
If no, is there an alternative functional power source? (N=547)		
Yes	443	80.9
No	104	19.0
Availability of adequate and regular good water supply (N=1170)		
Yes	1010	86.3
No	160	13.7
Client satisfied with the opening and closing hours (N=1195)		
Yes	1137	95.2
No	58	4.9

Table 3 shows that majority (94.4%) of the clients did not visit any other health facility apart from the present one. However, about 4.6 per cent of them reported to visit other health facilities apart from the present ones. For them, reasons for visiting other health facilities included to getting a second opinion on their health (18.8%) with majority reporting they did so when they traveled out of the state/location of the facility (81.2%). Most (47.8%) of the clients indicated once a month as the frequency of scheduled appointments in the facilities they attend while 41.9 per cent reported on a three- months interval. Majority (68.7%) of the clients stated that they were very satisfied with the care received at the health facilities while 21.6 per cent said they were somewhat satisfied. Only 1.5 per cent of them reported they were very dissatisfied with the care received. Findings also suggest a strong affirmation by clients that facilities have appropriate and adequate equipment (92.2%); cleanliness of facility at all times (91.9%); functional toilet facilities exist (84.9%); availability of adequate regular and water supply (86.3%); and satisfaction with the opening and closing hours of the facility (95.2%).

Table 3a: Distribution of Respondents by Reasons for Utilizing this Health Facility

Variable	Frequency	Percentage
***Why do you come to this facility health**		
It is close to my house	385	14.8
It has a neat environment	269	10.3
The staff are nice/friendly	437	16.8
The staff know and do their job very well	392	15.1
They have working equipment	325	12.5
They always have drugs	395	15.2
Someone recommended the hospital to me	400	15.4
***Reasons for visiting this health facility**		
To keep my regular appointment	737	31.5
For treatment of symptomatic infections	369	15.8
To collect ARV only	480	20.5
To do my CD4 count test	592	25.3
To do an HIV test for my baby	92	3.9
To collect ART drugs for my baby	71	3.0

**** This is a multiple response question. Percentages and totals are based on responses.***

Table 3a shows various reasons why clients for utilise their current health facility. Findings show that 16.8 per cent of their overall responses were due to the friendly nature of the staff members. Other reasons include recommendations from individuals (15.4%), availability of drugs in such facilities (15.2%) etc. Further questions were asked to determine reasons for visiting the facility and observations show that most responses from clients (31.5%) were based on their interest to keep with their regular appointment among others.

Table 4: Distribution of Respondents by Client Assessment of Time Spent Accessing HIV/AIDS Services

Variable	Frequency	Percentage
Duration of time before a patient card is issued		
Less than 30 mins.	823	68.8
Within 30 minutes and one hour	246	20.6
Within one to two hours	97	8.1
2 hours and above	31	2.6
Duration of time it took to open a file during first visit		
Less than 30 mins.	599	49.9
Within 30 minutes and one hour	406	33.9
Within one to two hours	147	7.7
2 hours and above	47	5.1
Duration of time for getting file ready for consultation (N=1197)		
Less than 30 mins.	639	53.9
Within 30 minutes and one hour	405	33.8

Within one to two hours	92	7.7
2 hours and above	61	5.1
Average waiting time for undertaking lab test (N=1180)		
Less than 30 mins.	341	28.9
Within 30 minutes and one hour	409	34.7
Within one to two hours	194	16.4
2 hours and above	236	20.0
What is the average waiting time for you to see a doctor/health provider in this facility?		
Less than 30 mins.	381	32.2
Within 30 minutes and one hour	523	44.2
Within one to two hours	183	15.5
2 hours and above	96	8.1
Average waiting time at the dispensary for collection of drug (N=1192)		
Less than 30 mins.	563	47.2
Within 30 minutes and one hour	412	34.6
Within one to two hours	112	9.4
2 hours and above	105	8.8
Time spent during clinic days from arrival to departure (N=1194)		
Less than 30 mins.	149	12.5
Within 30 minutes and one hour	243	20.4
Within one to two hours	292	24.7
2 hours and above	510	42.7

Table 4 shows that majority (68.8%) of the clients stated that it takes them less than 30 minutes to obtain patient cards in their respective health facilities. Only 2.6 per cent reported of a time of 2 hours and above before patients' cards are issued. On how long it takes to open a file for a new patient, about half (49.9%) said it takes less than 30 minutes while some (33.9%) reported within 30 minutes and one hour. Information on average waiting time for undertaking laboratory test was sought from clients and findings show that most (34.7%) reported within 30 minutes and one hour; 28.9 per cent reported less than 30 minutes with 20.0 per cent indicating it takes 2 hours and above. Furthermore, 44.2 per cent of clients stated that the average waiting time for them to see a doctor/health care provider is within 30 minutes and one hour with 32.2 per cent reporting it takes them less than 30 minutes. On clinic days, more (42.7%) of the clients reported they spend 2 hours and above from arrival to departure while only 12.5 per cent who reported less than 30 minutes, 20.4 per cent who said within 30 minutes and one hour and lastly 24.7 per cent leave the facility within one to two hours from their arrival time.

Table 5: Distribution of Respondents by Financial Expenditures for HIV/AIDS Services

Variable	Frequency	Percentage
Pays for any service received (N=1195)		
Yes	312	26.1
No	883	73.9
If yes, which of the services?		
Hospital card	153	55.2
Consultation	21	7.6
Testing	47	16.9
Drugs	49	17.7
Others	7	2.5
Mode of payment for services		
To the cashier	149	55.4
To the bank	10	3.7
To the pharmacist	38	14.1
To the doctor/nurses/lab. scientist	28	10.4
Others	44	16.4

Findings from Table 5 shows that majority (73.9%) of the clients did not pay for any of the services received in health facilities while 22.1 per cent of them paid. Among those who paid for services, more than half (55.2%) indicated that they paid for hospital card, 17.7 per cent paid for drugs, 16.9 per cent for tests undertaken while only 7.6 per cent reported they paid for consultations. For their modes of service payment, above half (55.2%) mentioned they paid to the cashier in the facility, while 14.1 per cent paid to the Pharmacist. However, only 3.7 per cent paid via banks. A pictorial explanation is provided in figure 4.

Figure 4: Financial Expenditure for HIV/AIDS Services

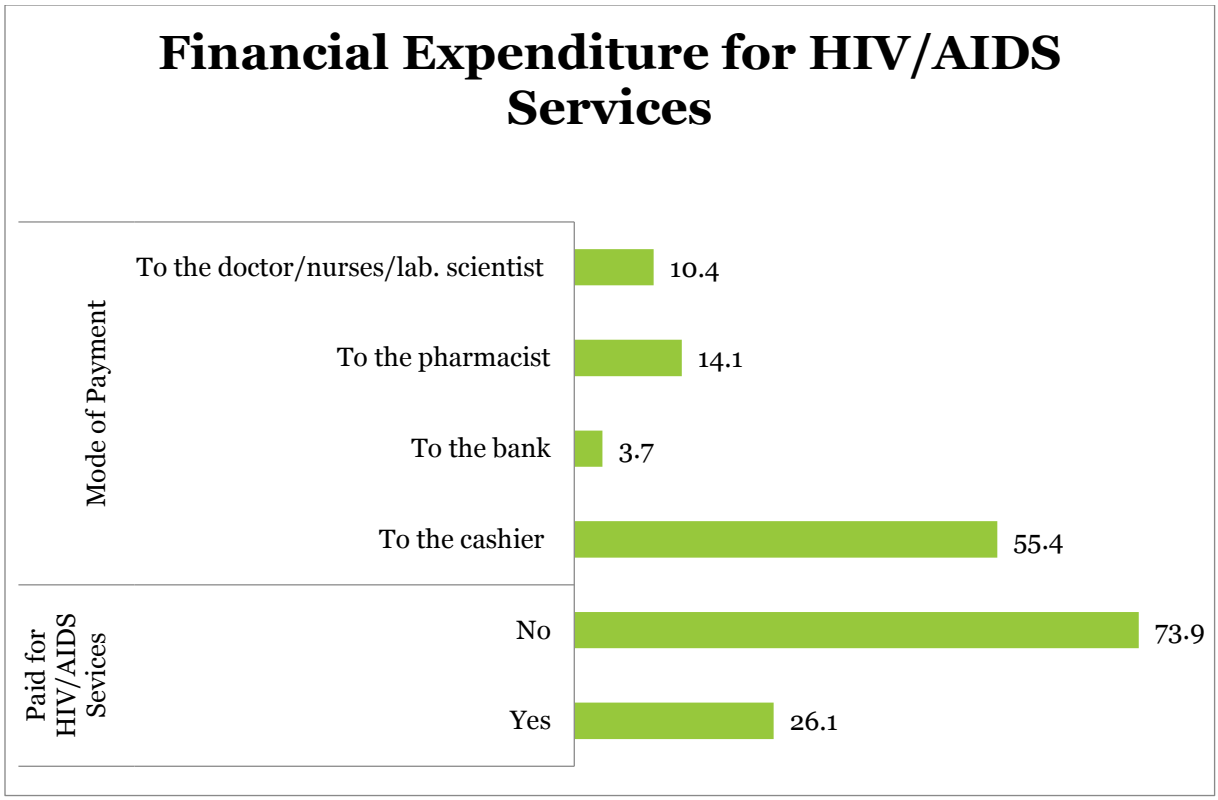


Table 6: Distribution of Respondents by Technical Quality and Competence of Health Facility

Variable	Frequency	Percentage
CD4 count test is undertaken in the facility (N=1175)		
Yes	1097	93.4
No	78	6.6
Service providers examine clients on every scheduled visit (N=1177)		
Yes	1082	91.9
No	95	8.1
Providers discuss client status/ progress at every scheduled appointment (N=1175)		
Yes	1116	94.9
No	59	5.0
Client believes his/her information is kept confidential at all times (N=1181)		
Yes	1156	97.9
No	25	2.1
Availability of separate/secured room for counselling of patients (N=1167)		
Yes	1127	96.6
No	40	3.4
Client collects his/her ARV drugs here (N=11886)		
Yes	1170	98.7
No	16	1.4
If yes, are the drugs always available? (N=1159)		

Yes	1142	98.5
No	17	1.8
Directives on how to use the drugs each time you collect them are provided (N=1167)		
Yes	1156	99.1
No	11	0.1
Clients encouraged to ask questions regarding the safe and proper use of their medication (N=1192)		
Yes	1181	99.1
No	11	0.9
Providers listen to client's opinion/contribution on the best way to comply with the given regimen (N1190)		
Yes	1178	98.9
No	12	1.0
Doctors/Nurses comply with fixed appointments (N=1162)		
Yes	1141	98.2
No	21	1.8
Adherence support for clients in this facility (N=1182)		
Yes	1152	97.5
No	30	2.5

According to Table 6, a very high proportion (93.4%) of clients indicated that CD4 count is undertaken in the health facilities they utilize. Most (91.9%) also stated that service providers examined them on every scheduled visit with just 8.1 per cent reporting they were not examined on every visit. Furthermore, more than four-fifth (94.9%) of the clients confirmed that providers discuss issues concerning their status and progress on every scheduled appointment. The findings also revealed that majority (97.9%) of the clients were optimistic that their information was kept confidential at all times. The availability of separate/secured rooms for counselling of patients was affirmed by a high proportion of clients (96.6%). Nearly all the clients (98.7%) reported that they collected their ARV drugs from the respective health facilities they visit. A negligible proportion (0.9%) of the clients said they were not encouraged to ask questions regarding the safe and proper use of their medications while 99.1 per cent were in affirmation of such an opportunity granted to them. It was also observed that most (99.1%) of the clients pointed out that the directive on how to use drugs were given by the health providers. On adherence support for clients in facilities studied, majority (97.5%) of the respondents confirmed that it existed at various health facilities.

Table 7: Distribution of Respondents by Examination of Staff Attitude and Relationship with Clients.

Variable	Frequency	Percentage
Providers listen to client at scheduled appointment (N=1195)		
Yes	1187	99.3
No	8	0.6
Providers answer client's questions to his/her satisfaction (N=1191)		
Yes	1174	98.6
No	17	1.4
Providers spend time during their consultations with client (N=1185)		
Yes	1147	96.8
No	38	3.2
Providers explain laboratory tests procedure to clients before commencement (N=1179)		
Yes	1100	93.3
No	79	6.7
Providers treat clients respectfully and politely at scheduled clinic appointment (N=1192)		
Yes	1167	97.9
No	25	2.1
Providers are punctual on scheduled clinic days (N=1197)		
Yes	1176	98.3
No	21	1.8
At emergency/unscheduled visits, providers readily available to address/attend to you (N=1163)		
Yes	1058	90.9
No	105	9.0

Table 7 shows a high proportion (99.3%) of the clients stated that providers listen to them at scheduled appointments. More so, majority (98.6%) of the respondents confirmed that health care providers gave them satisfactory answers to their questions. Most (96.9%) clients were in affirmation that providers spent time with them during consultations, with only 3.2 per cent in negation. Findings also indicated that health care providers explained laboratory tests procedure prior to commencement of ART. This was confirmed by a large proportion (93.3%) of the clients with only 6.7 per cent indicating that explanations were not provided. For emergency situations of unscheduled visits by clients to health facilities, it was observed that most (90.9%) of clients confirmed the availability of health care providers to attend to them.

Figure 5 showing Staff Attitude and Relationship with Clients

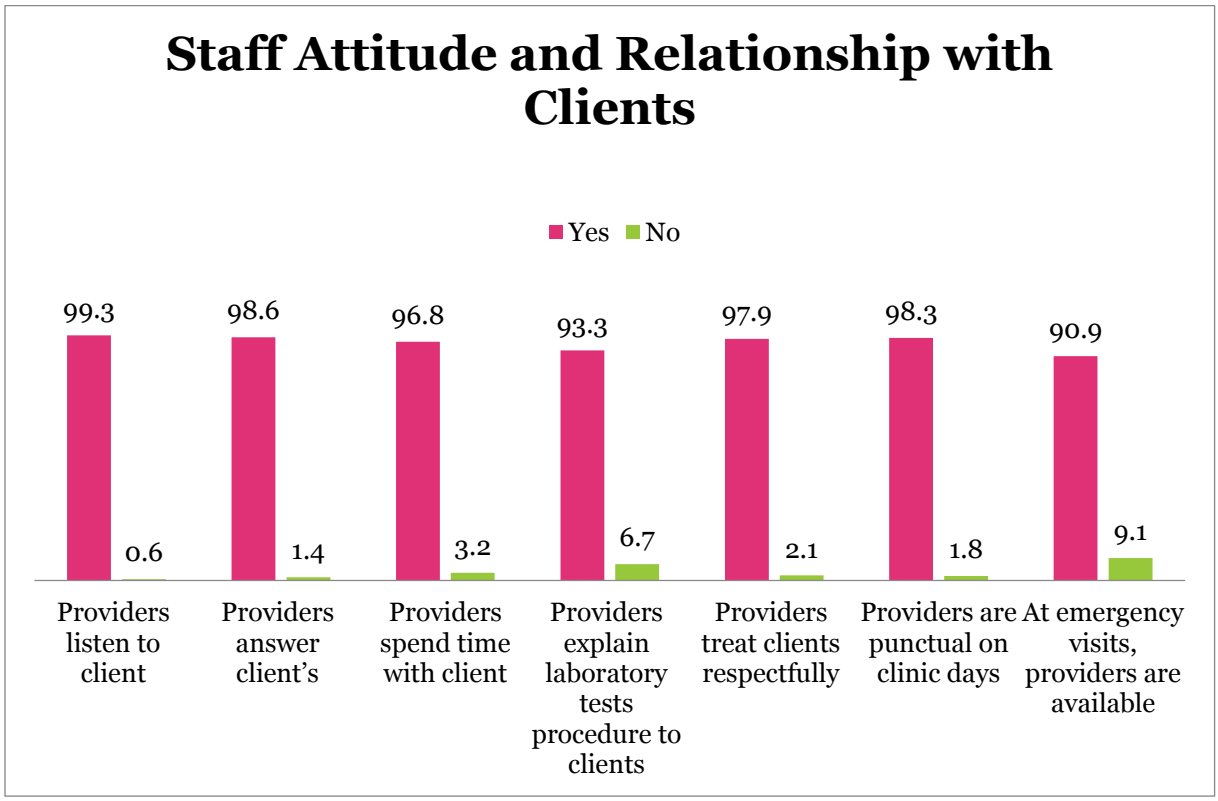


Table 8: Distribution of Respondents by Access to Health Care Services

Variable	Frequency	Percentage
Facility easily accessible to Client		
Yes	1072	89.7
No	123	10.3
Client thinks that facility is far from his/her residence		
Yes	547	46.4
No	633	53.4
Distance between the facility and client's place of residence		
< 2km	434	37.6
2km- 5km	307	26.6
>5km – 10km	146	13.5
>10km	266	23.1

Available findings from Table 8 on access to health care services show that more than four-fifth (89.7%) of the clients stated that the health care facility was accessible to them with only

10.3 per cent reporting otherwise. On nearness to place of residence to the facility, more than half (53.4%) were of the opinion that the health facility was not far from where they live. Majority (37.6%) of the clients stated a distance of less than 2km between their places of residence and the health facility. However, 26.6 per cent of the respondents stated that the distance between the health facility and their place of residence was between 2km and 5km while 23.1 per cent reported a distance of greater that 10km.

Table 9: Distribution of Respondents by Outcome of Services

Variable	Frequency	Percentage
Best way to describe client's health since commencement of treatment (N=1203)		
Much better	581	48.3
Better	435	36.2
Good	165	13.7
The same as before	18	1.5
Worst	4	0.3
Client has noticed improvement since commencement of treatment (N=1103)		
Yes	781	70.8
No	52	4.7
I don't know	270	24.5

Table 9 shows the assessment of clients' health and it is evident that respondents described their health since commencement of treatment in various ways. Majority (48.3%) of the clients confirmed that their health had become much better, 36.2 per cent stated 'better', while 13.7 per cent said their health had become good since after commencement of treatment. Only, a negligible (0.3%) stated their health had become worst since commencement on treatment. Most (70.8%) of the clients reported that they had noticed improvement since their commencement of treatment with 24.5 per cent saying they did not know if there had been an improvement.

Figure 6 showing Clients Outcome of Care

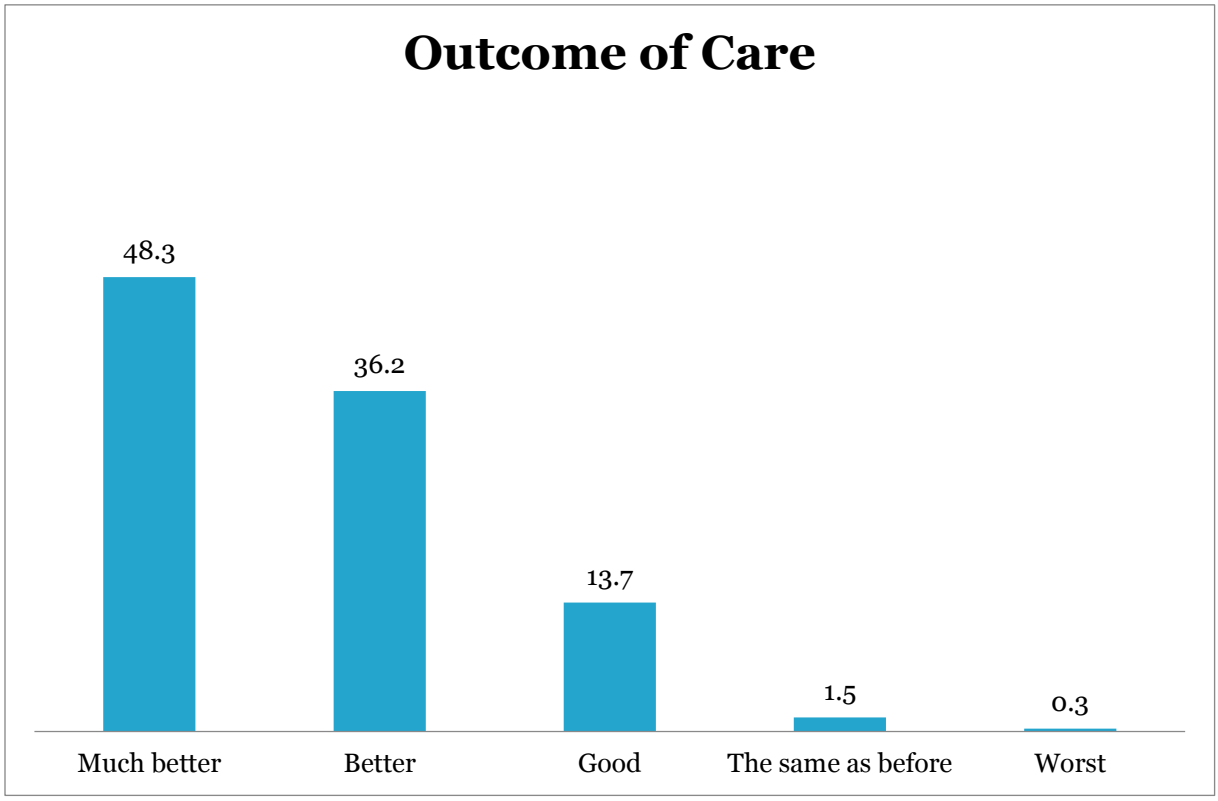


Table 10: Distribution of Respondents by Assessment of PMTCT Services

Variable	Frequency	Percentage
Client received HIV counselling and testing at ANC clinic (N=363)		
Yes	307	84.6
No	56	15.4
If yes, which type of HIV counselling was provided?		
Group counselling	113	40.2
Individual counselling	75	26.7
Both	93	33.1
Client received any infant feeding counselling at the ANC (N=320)		
Yes	300	93.8
No	20	6.3
Client aware if Early Infant Diagnostics services are offered at the facility (N=333)		
Yes		

No	303	90.9
Client aware if Daily Nevirapine drugs for 6 weeks for your baby are provided at the facility (N=333)	30	9.0
Yes	307	92.2
No	26	7.8
Client aware if Family Planning services/ condoms are provided in this facility (N=338)		
Yes	310	91.7
No	28	8.3

Clients' assessment of PMTCT Services according to Table 10 shows that 84.6 per cent of clients received HIV counselling and testing at ANC clinics compared to only 15.4 per cent who did not. Also, a high proportion (93.8%) of clients had access to infant feeding counselling at the ANC. Similarly, it was observed that majority (90.9%) of the clients were aware that health facility offers early infant diagnostic services. Furthermore, majority (91.7%) of client were aware that family planning services/ condoms are provided in health facilities.

Clients Bivariate Findings from the Client Questionnaire

Table 11: Client Socio-Demographic Characteristics and Outcome of Care

Variables	Outcome of Care		Test Statistics (χ^2)	Degree of Freedom	p-value
	Improved	Not Improved			
Sex					
Male	363 (97.6)	9 (2.4)			
Female	818 (98.4)	13 (1.6)	**1.046**	**1**	**0.306**
Age Group					
15-19	19 (95.0)	1 (5.0)			
20-24	91 (98.9)	1 (1.1)			
25-29	210 (97.2)	6 (2.8)			
30-34	266 (98.9)	3 (1.1)			
35-39	229 (99.6)	1 (0.4)	**8.459**	**7**	**0.163**
40-44	158 (97.5)	4 (2.5)			
45-49	107 (98.2)	2 (1.8)			
50+	100 (96.1)	4 (3.9)			
Marital Status					
Single	211 (98.6)	3 (1.4)			
Married	784 (97.8)	18 (2.2)	**2.924**	**4**	**0.886**
Separated	54 (100.0)	0 (0.0)			
Divorced	42 (100.0)	0 (0.0)			
Widowed	81 (98.8)	1 (1.2)			
Religion					
Christian	793 (98.5)	12 (1.5)			
Muslim	352 (97.5)	9 (2.5)	**8.784**	**3**	**0.082**
Traditional	10 (100.0)	0 (0.0)			
Others	5 (83.3)	1 (16.7)			
Place of Residence					
Urban	561 (98.6)	8 (1.4)			
Rural	572 (98.3)	10 (1.7)	**0.182**	**1**	**0.669**
Educational Attainment					

None	126 (97.7)	3 (2.3)			
Qur'anic	111 (97.4)	3 (2.6)			
Primary	251 (98.1)	5 (1.9)	**1.300**	**4**	**0.762**
Secondary	439 (98.7)	6 (1.3)			
Tertiary	223 (97.8)	5 (2.2)			
Ethnicity					
Yoruba	172 (95.6)	8 (4.4)			
Igbo	240 (98.0)	5 (2.0)			
Hausa	196 (98.0)	5 (2.0)	**6.892**	**4**	**0.109**
Others	375 (98.9)	4 (1.1)			
Employment status					
Employed	883 (98.3)	15 (1.7)	**0.718**	**1**	**0.397**
Unemployed	279 (97.6)	7 (2.4)			
Occupation					
Artisan	83 (96.5)	3 (3.5)			
Trader	306 (98.4)	5 (1.6)			
Business man	138 (97.9)	3 (2.1)	**11.554**	**6**	**0.056**
Farmer	129 (99.2)	1 (0.8)			
Housewife	148 (100.0)	0 (0.0)			
Public Servant	168 (99.4)	1 (0.6)			
Others	54 (94.7)	3 (5.3)			

Findings are statistically significant at p<0.05

Table 11 shows the cross-tabulation of clients' socio-demographic characteristics and outcome of care. No association between socio-demographic characteristics and outcome of care was found using a Chi-Square test. For sex of respondents, almost the same proportion (98%) of both males and females had improvement in their health outcomes (χ^2 = 1.046; df = 1 and p>0.05). This trend is consistent for other socio-demographic variables as observed in the Table. Furthermore, the bar chart in Figure 7 provides a visual confirmation that the pattern for clients who experienced improved outcomes of care in their health conditions was not totally different across all other age categories.

Figure 7 Bar Chart for Socio-demographic Characteristics and Outcome of Care

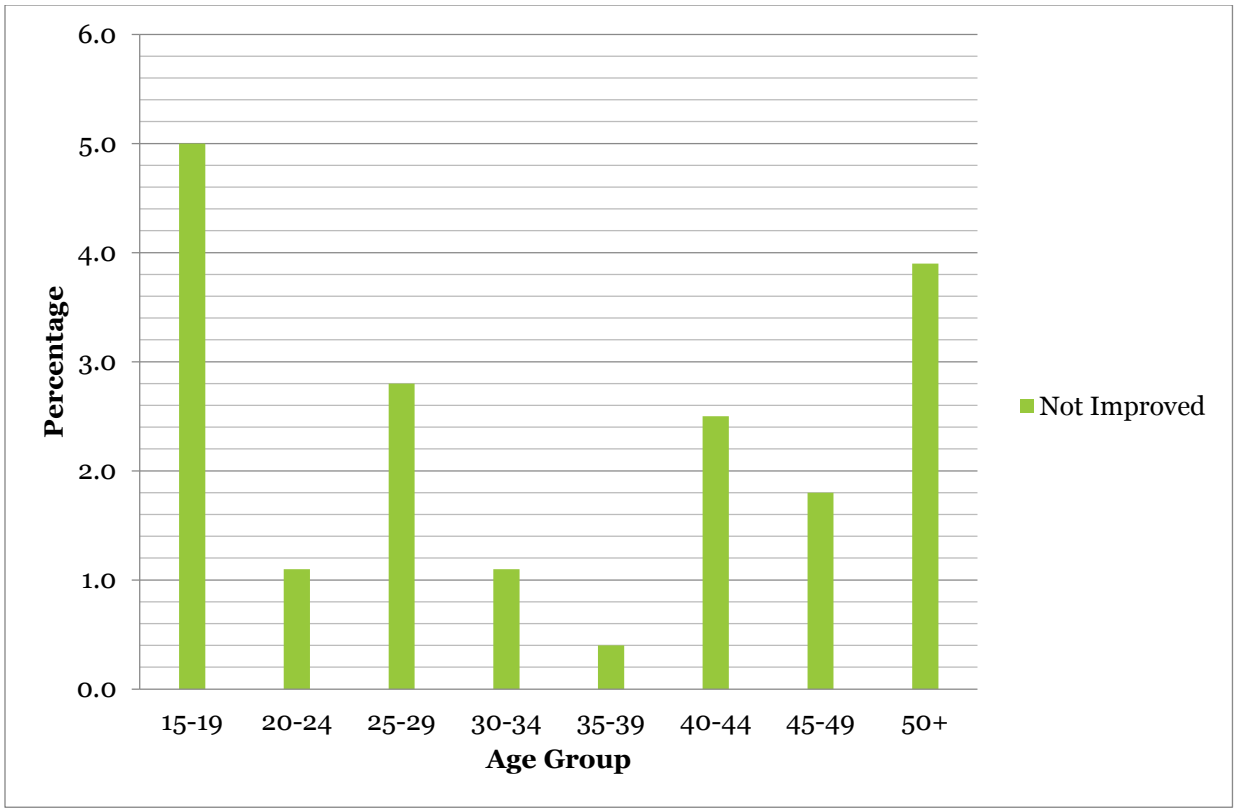


Table 12: Demographics of Health Facility and Outcome of Care

Variables	Outcome of Care				
	Improved	Not Improved	Test Statistics (χ^2)	Degree of Freedom	p-value
Facility Type					
Primary	110 (98.2)	2 (1.8)			
Secondary	1,071 (98.2)	20 (1.8)	**0.001**	**1**	**0.972**
Nature of Health Facility					
Faith-based	207 (100.0)	0 (0.0)			
Private for profit	58 (98.3)	1 (1.7)	**4.800**	**2**	**0.052**
Public	907 (97.7)	21 (2.3)			
Facility					
Urban	448 98.5)	7 (1.5)	**0.414**	**1**	**0.520**
Rural	515 (97.9)	11 (2.1)			

Findings are statistically significant at p<0.05

Findings show that there are no statistically significant association between health facility demographics and the outcome of care of clients, p.0.05. The same proportion (98.2%) of clients who had improvement in their health conditions patronized any of primary or secondary health facility. Similar trends were observed for the nature of health facility and location of health facility. Implicit in these findings is that none of these factors: nature of health facility, facility type and location of facility determined the extent of changes in the health conditions of patients.

Table 13: HIV Status of Patients and Outcome of Care

Variables	Outcome of Care		Test Statistics (χ^2)	Degree of Freedom	p-value
	Improved	Not Improved			
HIV diagnosis (months)					
Less than 36 months	640 (97.7)	15 (2.3)			
36 months and above	531 (99.1)	5 (0.9)	**3.289**	**1**	**0.070**
ART eligibility (months)					
Less than 36 months	678 (98.0)	14 (2.0)	**1.471**	**1**	**0.225**
36 months and above	453 (98.9)	5 (1.1)			
Client started ART here					
Yes	938 (98.5)	14 (1.5)	**3.711**	**1**	**0.054**
No	195 (96.5)	7 (3.5)			

Findings are statistically significant at p<0.05

For all the variables examining the HIV status of clients and their outcome of care, no association was observed (p>0.05). An investigation of the cell frequencies for HIV diagnosis showed that about a high proportion (98% and 99%) of those who had their diagnosis respectively in less than 36 months and 36 months or more ago had improvements in their health conditions. Therefore, conclusion could not be made that improved outcome of care is more common to clients who underwent their diagnosis in less than 36 months compared to those who did so in 36 months or more. The same trend was observed for ART eligibility period for clients and whether they started their ART in the same facility.

Table 14: Outcome of Care and Patients' Utilization of HIV Services

Variables	Outcome of Care		Test Statistics (χ^2)	Degree of Freedom	p-value
	Improved	Not Improved			
Reason for using HF					

Nearness to home	381 (99.2)	3 (0.8)	3.465	1	0.045
Neat environment	263 (98.1)	5 (1.9)	**0.002**	**1**	**0.966**
Nice/friendly staff	436 (98.8)	5 (1.2)	**1.687**	**1**	**0.194**
Staff well experienced	383 (98.2)	7 (1.8)	**0.004**	**1**	**0.949**
Working equipment	317 (98.1)	6 (1.9)	**0.002**	**1**	**0.968**
Availability of drugs	389 (99.0)	4 (1.0)	**2.160**	**1**	**0.172**
Recommendation	391 (98.2)	7 (1.8)	**0.021**	**1**	**0.886**
Why this particular HF					
Keeping appointment	726 (98.6)	10 (1.4)	**2.366**	**1**	**0.124**
Treatment of symptomatic infections	359 (97.6)	9 (2.4)	**1.112**	**1**	**0.292**
Collection of ARV only	471 (98.8)	6 (1.3)	**1.450**	**1**	**0.229**
For CD4 count test	581 (98.8)	7 (1.2)	**2.648**	**1**	**0.104**
HIV test for my baby	91 (97.9)	2 (2.1)	**0.011**	**1**	**0.710**
ART drugs for my baby	70 (98.6)	1 (1.4)	**0.140**	**1**	**0.708**
Do you use another HF					
Yes	46 (97.9)	1 (2.1)	**0.003**	**1**	**0.958**
No	971 (98.0)	20 (2.0)			
Frequency of appointments					
Once a week	73 (96.1)	3 (3.9)			
Once a month	550 (99.1)	5 (0.1)	**29.548**	**4**	**0.001****
Every 3 months	479 (98.4)	8 (1.6)			
Every 6 months	36 (87.8)	5 (12.2)			
Once a year	2 (100.0)	0 (0.0)			
Rating of Care Received					
Very satisfied	801 (98.9)	9 (1.1)			
Somewhat satisfied	243 (96.1)	10 (3.9)			
Neutral	77 (100.0)	0 (0.0)	**14.157**	**5**	**0.012****
Somewhat dissatisfied	13 (92.9)	1 (7.1)			
Very dissatisfied	17 (94.4)	1 (5.6)			
Note sure	6 (100.0)	0 (0.0)			
Fac. has adequate equipment					
Yes	1,052 (98.3)	18 (1.7)	**0.155**	**1**	**0.662**
No	87 (97.8)	2 (2.2)			
Facility clean always					
Yes	1,140 (98.1)	22 (1.9)	**0.694**	**1**	**0.405**
No	36 (100.0)	0 (0.0)			
Rooms clearly sign-posted					
Yes	1,073 (98.2)	20 (1.8)			
No	92 (97.9)	2 (2.1)	**0.042**	**1**	**0.691**
Functional toilet fac.					
Yes	971 (98.6)	14 (1.4)			
No	171 (97.2)	5 (2.8)	**1.869**	**1**	**0.172**
Regular power supply					
Yes	602 (98.1)	12 (1.9)	**0.212**	**1**	**0.645**
No	554 (98.4)	9 (1.6)			
Alternative power source					
Yes	435 (98.6)	6 (1.4)			
No	100 (97.1%)	3 (2.9)	**1.236**	**1**	**0.382**
Regular good water supply					
Yes	988 (98.4)	16 (1.6)			
No	153 (96.8)	5 (3.2)	**1.899**	**1**	**0.168**
Opening/closing hrs. okay					
Yes	1,109 (98.1)	21 (1.9)			
No	56 (98.3)	1 (1.7)	**0.003**	**1**	**0.955**

Findings are statistically significant at p<0.05

Table 4 shows an association was observed between frequency of appointments and outcome of care, χ^2 =. 29.548, df = 4 and p < 0.001. More (99.1%) of clients who visited the health

facilities every month had their health conditions improved compared to those who did so every week, every three months and once in six months. Furthermore, there was a statistically significant relationship between rating of care received and outcome of care, $\chi^2 = 14.157$; df = 4; $p<0.05$. A high proportion (98.9%) of clients who were very satisfied with the health services received from the health facilities had their health improved. For other variables on patients' utilization of HIV Services, no association was observed with outcome of care, $p>0.05$

Table 15: Outcome of Care and Time Spent Accessing HIV/AIDS services by Patients

Variables	Outcome of Care		Test Statistics (χ^2)	Degree of Freedom	p-value
	Improved	Not Improved			
Time before getting patient's card					
Less than 30 mins.	807 (98.5)	12 (1.5)			
30 mins & one hour	242 (98.4)	4 (1.6)			
Within one to two hours	90 (94.7)	5 (5.3)	**7.721**	**3**	**0.098**
2 hours and above	31 (100.0)	0 (0.0)			
Time it took to open a file at first visit					
Less than 30 mins.	587 (98.7)	8 1.3()			
30 mins & one hour	395 (97.5)	10(2.5)			
Within one to two hours	142 (97.9)	1 (2.1)	**1.754**	**3**	**0.475**
2 hours and above	46 (97.9)	1 (2.1)			
Duration of time for getting file ready for consultation (N=)					
Less than 30 mins.	627 (98.7)	8 (1.3)			
30 mins & one hour	393 (98.0)	8 (2.0)	**3.048**	**3**	**0.207**
Within one to two hours	89 (96.7)	3 (3.3)			
2 hours and above	59 (96.7)	2 (3.3)			
Av. time for lab test					
Less than 30 mins.	333 (99.1)	3 (0.9)			
30 mins & one hour	400 (97.8)	9 (2.2)	**3.660**	**3**	**0.278**
Within one to two hours	190 (98.5)	3 (1.5)			
2 hours and above	228 (97.0)	7 (3.0)			
Av. waiting time to see Doctor					
Less than 30 mins.	372 (98.4)	6 (1.6)			
30 mins & one hour	511 (98.7)	7 (1.3)			
Within one to two hours	177 (96.7)	6 (3.3)	**3.722**	**3**	**0.235**
2 hours and above	93 (96.9)	3 (3.1)			
Av. waiting time for collecting drug					
Less than 30 mins.	554 (99.1)	5 (0.9)			
30 mins & one hour	404 (98.5)	6 (1.5)	**17.448**	**3**	**0.002****
Within one to two hours	104 (93.7)	7 (6.3)			
2 hours and above	101 (96.2)	4 (3.8)			
Time spent during clinic days from arrival to departure (N=)					
Less than 30 mins.	146 (99.3)	1 (0.7)	**5.878**	**3**	**0.108**
30 mins & one hour	240 (99.6)	1 (0.4)			
Within one to two hours	282 (97.2)	8 (2.8)			
2 hours and above	496 (97.6)	12 (2.4)			

Findings are statistically significant at p<0.05

Among various factors explaining duration of time spent in accessing health care services by clients, only average waiting time before collection of drugs was found to be associated with outcome of care, $\chi^2 = 17.448$; df = 3 and $p<0.05$. Examination of cell frequencies showed that 99 per cent of clients who waited just less than 30 minutes before collecting their drugs on clinic days had improved health outcomes compared to those who collected theirs within one to two hours (93.7%) and those it took two hours and above (96%) to do so. However, a non-statistical relationship was observed for other variables and outcome of care, $p>0.05$. The bar chart in Figure 8 provides a visual confirmation that the pattern for clients who experienced improved outcomes of care in their health conditions are not totally different for clients waiting time either to undertake laboratory tests or before they could see a doctor.

Figure 8 Time Spent on Accessing Health Care services and Outcome of Care

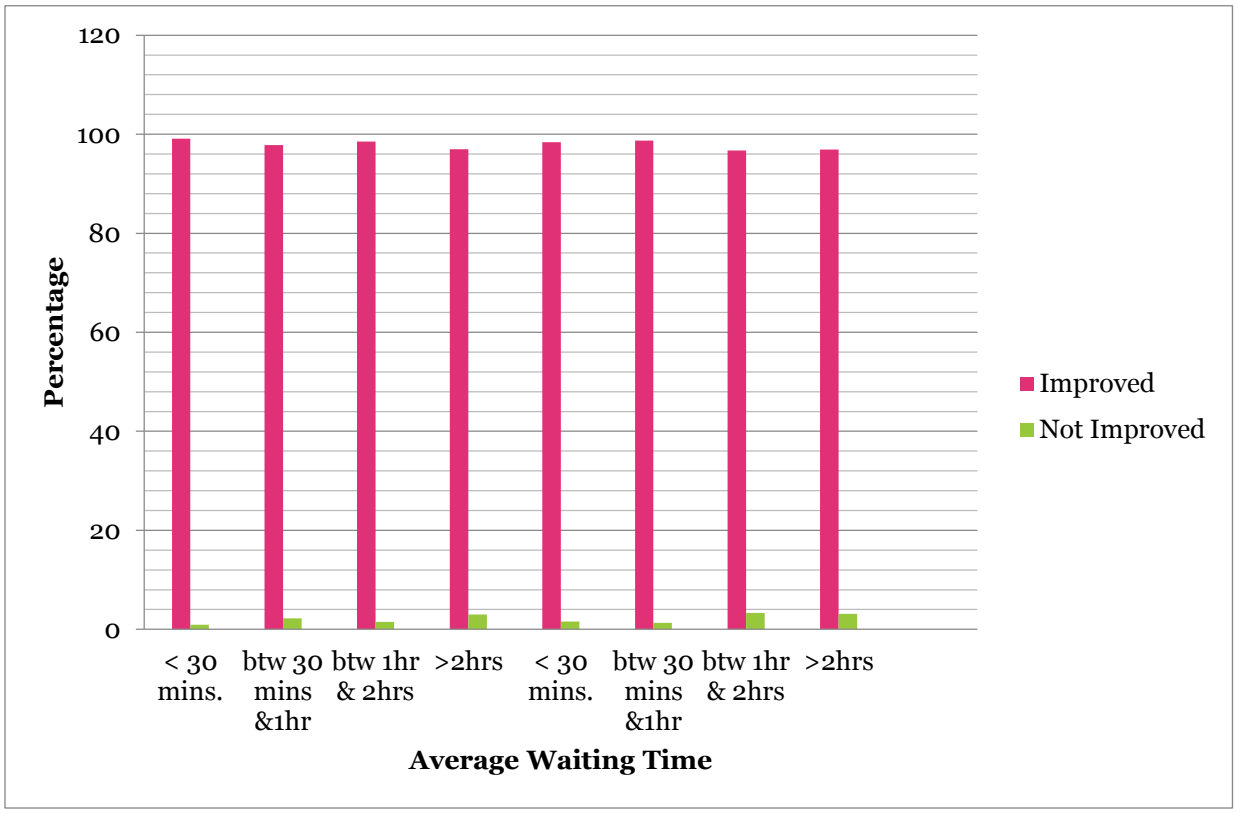


Table 16: Financial Aspects of Services and Outcome of Care

Variables	Outcome of Care		Test Statistics	Degree of Freedom	p-value
	Improved	Not Improved			

			(χ^2)		
Pay for services received					
Yes	301 (97.4)	8 (2.6)			
No	866 (98.4)	14 (1.6)	**1.255**	**1**	**0.263**
Which of the services, if yes					
Hospital card	148 (98.0)	3 (2.0)			
Consultation	20 (95.2)	1 (4.8)			
Testing	45 (97.8)	1 (2.2)	**1.276**	**4**	**0.654**
Drugs	47 (95.9)	2 (4.1)			
Others	7 (100.0)	0 (0.0)			
***Mode of payment for services**					
To cashier	144 (98.6)	2 (1.4)			
To bank	10 (100.0)	0 (0.00)			
To pharmacist	37 (97.4)	1 (2.6)	**5.562**	**4**	**0.232**
To doctor/scientist	26 (92.9)	2 (7.1)			
Others	44 (100.0)	0 (0.0)			

Findings are statistically significant at p<0.05

From the analysis in Table 16, none of the variables for examining the association of financial aspects of services and outcome of care was statistically significant. Cell proportions for payment for services received high percentages (97.4% and 98.4%) of those who had said they paid for services and those who did not pay respectively had improvements in their health conditions. Therefore, conclusion could not be made that improved outcome of care is more common to clients who paid for services received compared to those who did not pay. The same trend was observed for other variables as evidenced from the Table.

Table 17: Outcome of Care and Technical Quality/Competence of Health Facility

Variables	**Outcome of Care**				
	Improved	**Not Improved**	**Test Statistics** (χ^2)	**Degree of Freedom**	**p-value**
Facility performs CD4 count test					
Yes	1,073 (98.2)	19 (1.7)			
No	75 (98.7)	1 (1.3)	**0.076**	**1**	**0.783**
Provider examine clients on each visit					
Yes	1,055 (98.1)	21 (1.9)			
No	95 (100.0)	0 (0.0)	**1.888**	**1**	**0.406**
Providers discuss client status					
Yes	1,093 (98.3)	18 (1.6)			
No	56 (96.6)	2 (3.4)	**1.096**	**1**	**0.261**
Provider keep confidential client info					
Yes	1,132 (98.4)	19 (1.6)	**5.981**	**1**	**0.066**
No	22 (91.7)	2 (8.3)			
Separate room for counselling					
Yes	1,101 (98.3)	19 (1.7)	**0.1472**	**1**	**0.507**
No	39 (97.5)	1 (2.5)			
Client collects his/her ARV drugs here					

	1,143 (98.2)	21 (1.8)			
Yes	15 (100.0)	0 (0.0)	**0.276**	**1**	**0.600**
No					
If yes, are the drugs always available (N=)					
Yes	1,115 (98.1)	21 (1.8)	**0.320**	**1**	**0.572**
No	17 (100.0)	0 (0.0)			
Directives on how to use the drugs					
Yes	1,129 (98.2)	21 (1.8)	**0.205**	**1**	**0.651**
No	11 (100.0)	0 (0.0)			
Clients encouraged to ask questions	1,154 (98,2)	21 (1.8)	**3.193**	**1**	**0.187**
Yes	10 (90.9)	1 (1.1)			
No					
Providers listen to client's opinion					
Yes	1,151 (98.2)	21 (1.8)	**2.787**	**1**	**0.202**
No	11 (91.7)	1 (8.3)			
Doctors/Nurses comply appointments					
Yes	1,116 (98.3)	19 (1.7)	**7.123**	**1**	**0.054**
No	19 (90.5)	2 (9.5)			
Adherence support for clients done	1,128 (98.3)	19 (1.7)			
Yes	28 (93.3)	2 (6.7)	**4.188**	**1**	**0.098**
No					
CD4 count test is done in the facility					
Yes	1,073 (98.3)	19 (1.7)	**0.076**	**1**	**0.783**
No	75 (98.7)	1 (1.3)			
Service providers examine clients					
Yes	1,055 (98.1)	21 (1.9)			
No	95 (100.0)	0 (0.0)	**1.888**	**1**	**0.406**
Providers discuss client status					
Yes	1,093 (98.4)	18 (1.6)			
No	56 (96.6)	2 (3.4)	**1.096**	**1**	**0.261**
Client believes his info is kept secret					
Yes	1,132 (98.4)	19 (1.6)	**5.981**	**1**	**0.066**
No	22 (91.7)	2 (8.3)			
Separate rooms for counselling exist					
Yes	1,101 (98.3)	19 (1.7)	**0.147**	**1**	**0.507**
No	39 (97.5)	1 (2.5)			

Findings are statistically significant at p<0.05

Table 17 shows the cross-tabulation of clients' assessment of technical quality/competence of health facility and outcome of care. No association was observed between technical quality/competence of health facility and outcome of care using a Chi-square test. On whether the facility performs CD4 count test, findings show that almost the same proportions (98.2% and 98.7%) of the clients who said the facility performs CD4 count and those who said they do not had improved health outcomes ($\chi^2 = 0.076$; df = 1 and $p>0.05$). This trend is consistent for other variables in the Table.

Table 18: Outcome of Care and Staff Attitude

Variables	Outcome of Care		Test Statistics (χ^2)	Degree of Freedom	p-value
	Improved	Not Improved			
Providers listen to client at scheduled appointment					
Yes	1,159 (98.2)	21 (1.8)			
No	8 (100.0)	0 (0.0)	**0.145**	**1**	**0.070**
Providers answer client's questions to his/her satisfaction					
Yes	1,147 (98.3)	20 (1.71)			
No	16 (94.1)	1 (5.9)	**1.671**	**1**	**0.026****
Providers spend time during their consultations with client					
Yes	1,120 (98.3)	20 (1.7)			
No	37 (97.4)	1 (2.6)	**0.162**	**1**	**0.501**
Providers explain laboratory tests procedure to clients before commencement					
Yes	1,074 (98.2)	20 (1.8)	**0.133**	**1**	**0.716**
No	78 (98.7)				
Providers treat clients respectfully and politely at scheduled clinic appointment					
Yes	1,139 (98.2)	21 (1.8)	**0.644**	**1**	**0.377**
No	24 (96.0)	1 (4.0)			
Providers are punctual on scheduled clinic days					
Yes	1,150 (98.3)	20 (1.7)	**6.948**	**1**	**0.055**
No	19 (90.5)	2 (9.5)			
At emergency/unscheduled visits, providers readily available to address/attend to you					
Yes	1,036 (98.2)	19 (1.8)	**0.008**	**1**	**0.712**
No	102 (98.1)	2 (1.9)			

Findings are statistically significant at p<0.05

Table 18 shows that an association exists between the ability of health care providers to answer clients questions to their satisfaction and outcome of care, p<0.05. Majority (98.3%) of clients who said that health care providers' answer their questions to their satisfaction had improved health outcomes compared to those who did not receive satisfactory answers from the health providers. However, there was no statistically significant association between other variables for measuring staff attitude and outcome of care, p>0.05.

Table 19: Outcome of Care and Access to Service

Variables	Outcome of Care		Test Statistics (χ^2)	Degree of Freedom	p-value
	Improved	Not Improved			
Facility easily accessible to Client					
Yes	1,052 (98.6)	15 (1.4)			
No	116 (94.3)	7 (5.7)	**11.161**	**1**	**0.001****
Client thinks that facility is far					

from his/her residence					
Yes	533 (98.0)	11 (2.0)			
No	621 (98.4)	10 (1.6)	**0.318**	**1**	**0.573**
Distance between the facility client's place of residence					
< 2km	430 (99.5)	2 (0.5)			
2km- 5km	297 (97.1)	9 (2.9)			
>5km -10km	141 (97.9)	3 (2.1)	**63.352**	**5**	**0.002****
> 10km					

Findings are statistically significant at p<0.05

Among the factors explaining client's access to services and outcome of care, accessibility of health facility to client and distance of the health facility to the place of residence were found to be statistically associated with outcome of care, p<0.05. More (98.6%) of the clients who said the facility was easily accessible to them had improved health conditions compared to those who said they do not have easy access to health facility, χ^2 = 11.161; df = 1 and p<0.05.Similarly, more clients (99.5%) who confirmed that the distance between the health facility and their place of residence is less than 2km had improved health conditions compared to others with higher distances between their homes and the facility.

Table 20: Outcome of Care and Utilization of PMTCT Services

Variables	**Outcome of Care**				
	Improved	**Not Improved**	**Test Statistics (χ^2)**	**Degree of Freedom**	**p-value**
Client received HIV counselling and testing at ANC clinic					
Yes	301 (99.0)	3 (1.0)			
No	53 (94.6)	3 (5.4)	**5.511**	**1**	**0.051**
If yes, which type of HIV counselling was provided?					
Group counselling	112 (99.1)	1 (0.9)			
Individual counselling	72 (98.6)	1 (1.4)	**0.098**	**2**	**0.952**
Both	92 (98.9)	1 (1.1)			
Client received any infant feeding counselling at the ANC					
Yes	291 (98.2)	6 (2.0)			
No	19 (95.0)	1 (5.0)	**0.771**	**1**	**0.380**
Client aware if Early Infant Diagnostics services are offered at the facility (N=)					
Yes	296 (98.3)	5 (1.7)			
No	29 (100.0)	0 (0.0)	**0.489**	**1**	**0.07**
Client aware if Daily Nevirapine drugs for 6 weeks for your baby are provided at the facility (N=)					
Yes	299 (98.4)	5 (1.6)			
No	26 (100.0)	0 (0.0)	**0.434**	**1**	**0.510**
Client aware if Family Planning services/ condoms are provided in					

this facility (N=)					
Yes	302 (98.4)	5 (1.6)			
No	28 (100.0)	0 (0.0)	**0.463**	**1**	**0.496**

Findings are statistically significant at p<0.05

Table 20 shows the cross-tabulation of clients' utilization of PMTCT services and outcome of care. There was no statistical association observed- no statistically significant association was observed between utilization of PMTCT services and outcome of care. Though cell frequencies show that more (99.0%) of clients who said they received HIV counselling and testing had improved health outcome compared to the proportion (94.6%) of those who said they did not receive HIV counselling and testing, $\chi^2 = 5.511$; df = 1 and p>0.05. This trend is consistent with other findings as observed in the Table.

Clients Multivariate Findings

Table 21: Model Selection

	AIC	BIC	ROC Area
Model 1	165.51	219.65	0.85
Model 2:	180.56	234.72	0.84

Table 21 shows AIC, BIC and ROC area that were used for model building for the multiple regression models. The best two selected models were shown in the methodology section. Of the two models, the better model was model 1 with the lower AIC and BIC values, and a higher ROC area.

Figure 9

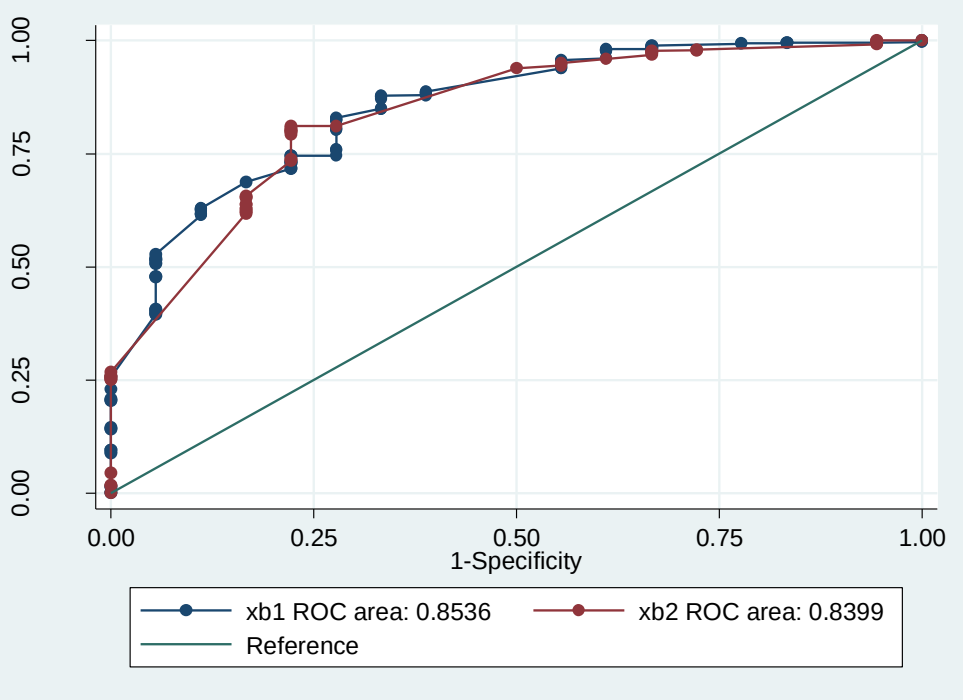


Figure 9 shows the area under the curve for model 1 and model 2. Model 1 with a higher ROC is a better model than model 2.

Table 22 Multivariate Analysis of Predictors of Improved health outcomes among Patients

Variables (n=1014)	Odds Ratio	P-value	Confidential Interval		bStdXY
			Lower	Upper	
Age Category (RC <25years)	3.8	0.228	0.4	6.8	0.160
Sex (RC=female)	1.5	0.463	0.5	4.1	0.076
Reason for Facility Use – Closeness (RC=No)	5.0	0.063	0.9	27.4	0.319
Length of HIV Diagnosis (RC<28 months)	0.4	0.090	0.1	1.2	-0.203
Information Confidentiality (RC=No)	1.1	0.949	0.2	7.4	0.004
Adherence to Appointment (RC=No)	17.2	0.006*	2.3	30.8	0.163
Adherence Support (RC=No)	1.4	0.692	0.2	8.8	0.024
Providers' Punctuality on Clinic Days (RC=No)	9.9	0.015*	1.5	17.7	0.124

Ease Facility Accessibility (RC=No)	3.3	0.037*	1.1	10.5	0.161
Improvement in CD4 Count (RC=No)	8.0	<0.001*	2.5	25.6	0.398

RC=Reference category *Significant

The predictors of improved health outcomes among HIV/AIDS clients receiving treatment at health facilities were : adherence to hospital appointments by clients with an OR 17.2 95% CI 2.3 to 30.8; providers' punctuality on scheduled clinic days OR 9.9 95%CI 1.5 to 17.7; patients with easily accessible facility OR 3.3 95%CI 1.1 to 10.5; and patients with improvement in CD4 count OR 8.0 95%CI 2.5 to 25.6. From table 22, improvement in CD4 was the strongest predictor of quality of care followed by adherence to appointment and easily accessible facility. The least predictor was providers' punctuality on scheduled clinic days. The strength of the predictors was examined using fully standardized coefficient (bStdXY).

Table 23: This is a summary of model evaluation

	Chi Square *(χ^2)*	**Coefficient**	**P-value**
Model specification			
_hat		1.220	0.001
_hatsq		0.027	0.470
Hosmer-Lemeshow goodness of fit statistic	2.16		0.976

Table 23 shows outcomes of model evaluation methods used. Model evaluation method was needed to ensure the predictive nature of the model and that potential variable that could predict the outcome was not left out in the model. In the model specification, the linear predicted value (_hat) was significant with a p-value of 0.001 and linear predicted value squared (_hatsq) was not significant with a p-value of 0.470. This implies that variables that were not meant to be included in model 1 were not included, and no relevant variable was omitted. Hosmer-Lemeshow goodness of fit statistic with chi value of 2.16 and p-value of 0976 shows that model 1 fits the data well with no over fitting.

Univariate Analysis for Health Provider

Table 24: Distribution of Respondents by Demographics of Health Facility

Variable	Frequency	Percentage
Type of Health Facility(N=157)		
Primary	31	19.8
Secondary	126	80.3
Nature of Health Facility (N=152)		
Faith-based	24	15.8
Private for profit	11	7.2
Public	117	77.0
Location of Health Facility (N=154)		
Urban	107	69.5
Rural	47	30.5

There were basically three demographics of the health facilities where respondents were interviewed. It includes the types of health facility which were primary 31(19.8%) and secondary 126(80.3%). The nature of facilities, faith based 24(15.8%), private for profit 11(7.2%) and public 117(77.0). The location of facilities was either urban or rural, and their proportions were 107(69.5%) and 47(30.5%) respectively.

Table 24b: Distribution of Respondents by Socio-Demographic Information of Health Care Provider

Variable	Frequency	Percentage
Sex (N=157)		
Male	67	42.7
Female	90	57.3
***Age Group (N=157)**		
20-24	0	0
25-29	14	8.9
30-34	22	14.0
35-39	20	12.7
40-44	22	14.0
45-49	32	20.0
50+	47	29.9
***Duration of working in this position (years) (N=)**		
1-2	39	24.8
3-4	34	21.7
5+	84	53.5
***Duration of working in this facility (years) (N=)**		
1-2	28	17.8
3-4	22	14.0
5+	107	68.2

Profession (N=133)		
Doctor	53	39.3
Nurse	59	83.0
Mid-Wife	7	88.2
CHEW	12	97.0
JCHEW	2	1.5
***Years of Experience (N=157)**		
1-2	6	3.8
3-4	11	7.0
5+	140	89.2

In Table 24b, the sex distribution of health providers shows more females 57.3% were interviewed than males 42.7%, majority 47 (29.9%) were in the age group 50 years and above, this was followed by the 45-49 years age group 32 (20.0%) with the least in the age group 25-29 at 14 (8.9%) with none in 20-24 years age group. The duration of staff working in a particular position was highest at 5 years and above with the least those who had worked for 1-2 years at 8.9%. Majority 107(68.2%) who had worked within the facility had worked for 5 years and above. Most respondents had five years and above working experience.

Table 25: Distribution of Respondents by Services Provided in Health Facility

Variable	Frequency	Percentage
Outpatient	148	96.1
Inpatient	135	91.2
HIV/AIDS Testing	148	95.5
HIV Counselling	150	96.2
Antenatal	136	92.5
Postnatal	131	91.6
Immunization	111	80.4
ARV dispensing/Refill	120	85.7
CD count testing	108	76.6
Initiation of HIV/AIDS treatment	126	86.9
Malaria testing/treatment	131	91.0
TB Testing	95	68.8
TB treatment	111	77.1
Prevention of HIV/AIDS awareness	134	89.9
Treatment of STDs/STIs	129	89.0
Distribution of condoms	107	78.0
Prevention of MTCT	145	94.8
Treatment of Opportunistic Infections	135	88.8

HIV counselling was the highest service provided by the health providers with 96.2% and TB testing was the least service provided with 68.8%.

Table 25b: Distribution of Respondents by Other Services

Variable/Characteristics	Frequency	Percentage
Do HIV/AIDS patients come to this facility(N=154)		
Yes	154	100.0
No	0	0.0
How often (N=133)		
Once a week	18	13.0
Twice per week	39	28.1
Everyday	76	54.7

HIV/AIDS patients visit the facilities on a daily basis; only about 28.1% and 13% visited the facility twice per week and weekly respectively.

Table 26: Distribution of Respondents by Staffing in Health Facility

Variable	Frequency	Percentage
Facility has skilled staff (N=157)		
Yes	140	89.2
No	17	10.8
Staff Trained to carry out responsibilities effectively (N=157)		
Yes	147	93.6
No	10	6.37
Staff attend refresher course (N=157)		
Yes	120	76.4
No	37	23.6
Rating of Working Env. (N=157)		
Excellent	18	11.5
Very Good	53	33.8
Good	72	45.9
Poor	11	7.0
Very Poor	3	1.9

Most 89.2% staff in the facility were skilled with only a handful (10.8%) not very skilled in their line of duty. About 93.6% of the staff had been effectively trained to carry out their responsibilities while 76.4% have attended refresher training. On a scale of rating of the working environment, most 45.9% facilities were rated good with 11.5% and 33.8% rated excellent and very good respectively.

Table 27: Distribution of Respondents by Infrastructure in Health Facility

Variable	Frequency	Percentage
Has sufficient Consulting Rooms (N=157)		
Yes	97	61.8
No	60	38.2
Consulting Rooms designed to provide privacy (N=157)		
Yes	127	80.9
No	30	19.1
Running Water in Consulting Room (N=157)		
Yes	86	54.8
No	71	45.2
If Ýes, provision of hand washing liquids (N=76)		
Yes	58	76.3
No	18	23.7
Consulting rooms ventilated (N=157)		
Yes	127	80.9
No	30	19.1
Enough seats provided in waiting areas (N=157)		
Yes	117	74.5
No	40	25.5
Rooms/departments clearly sign-posted (N=157)		
Yes	107	68.2
No	50	31.9
Availability of functional staff toilet facilities (N=156)		
Yes	126	80.8
No	30	19.2
Availability of functional staff toilet facilities (N=157)		
Yes	115	73.3
No	42	26.8
Regular Power Supply in the HIV unit (N=157)		
Yes	51	32.5
No	106	67.5
If No, any alternative power source (N=101)		
Yes	79	78.2
No	22	21.8
Availability of adequate security (N=157)		
Yes	126	80.3
No	31	19.8

In terms of distribution of infrastructure by facilities, 61.8% had sufficient consulting rooms, with 80.9% consulting rooms designed to provide privacy while 54.8% had running water in consulting room with 76.3% been provided with hand washing liquids. 80.9% of these consulting rooms were ventilated, 74.5% had enough seats provided in waiting areas, 68.2% rooms and departments clearly sign-posted and 80.8% had functional staff toilet facilities. Also, only 32.5% had regular power supply in the HIV unit. 78.2% of the facilities had no any alternative power source. However, 80.3% of the facilities had adequate security in place.

Table 28: Distribution of Respondents by Equipment in Health Facility

Variable	Frequency	Percentage	Variable	Frequency	Percentage
CD4 Machine (N=151)			**CD4 Machine (N=134)**		
Available	123	81.5	Functional	106	79.1
Not Available	28	18.5	Non-Functional	28	20.9
Hematology (N=149)			**Hematology (N=133)**		
Available	127	85.2	Functional	120	90.2
Not Available	22	14.8	Non-Functional	13	9.8
E, U & Cr (N=147)			**E, U & Cr (N=126)**		
Available	106	72.1	Functional	91	72.2
Not Available	41	27.9	Non-Functional	35	27.8
Microscopes (N=153)			**Microscopes (N=146)**		
Available	135	88.2	Functional	132	90.4
Not Available	18	11.8	Non-Functional	14	9.6
Refrigerators (N=154)			**Refrigerators (N=147)**		
Available	142	92.2	Functional	131	89.1
Not Available	12	7.8	Non-Functional	16	10.9
HIV Test kits (N=153)			**HIV Test Kits (N=142)**		
Available	148	96.7	Functional	138	97.2
Not Available	5	3.3	Non-Functional	4	2.8

Table 28 shows respondents by equipment in the facility. About 81.5% of the facilities have CD4 machines available with 79.1% functional. The facilities that had functional hematology machines were 90.2%. Machines for electrolyte, urea and creatinine, microscopes, refrigerators and test kits were functional in 72.2%, 90.4%, 89.1% and 97.2% of the facilities respectively.

Table 29: Distribution of Respondents by Process of Care Delivery in Health Facilities

Variable	Frequency	Percentage
Physical examination carried out on every clinic visit (N=157)		
Yes	133	84.7
No	24	15.3
If No, give reasons (N=15)		
Inadequate time	4	26.7
Shortage of staff	9	60.0
Too many patients	2	13.3
No space	N	%
Are patients seen counselled on drug use at each visit(N=157)		
Yes	152	96.8
No	5	3.2

Are patients allowed to ask questions on use of medications (N=156)		
Always	147	94.2
Patients linked to support groups (N=157)		
Yes	140	89.2
No	17	10.8
HIV clients are routinely screened for TB (N=157)		
Yes	141	89.8
No	16	10.2
Health Facility has current ART guidelines (N=123)		
Yes	108	87.8
No	15	12.2
Health Facility has current PMTCT guidelines (N=136)		
Yes	117	86.0
No	19	14.0

The table 29 shows the distribution of health providers by the process of care delivery in health facilities. About 84.7% of health providers carried out physical examination on every clinic visits, and 15.3% that did not exam patient were due to shortage of staff and time. Percentage of health providers who counselled patients on drug use at each visit were 96.8% while 89.2% of the health providers linked patients to support groups and 89.8% of the providers were routinely screened for TB. About 87.8% and 86.0% of the health providers had the current ART and PMTCT guidelines respectively.

Table 29b: Distribution of Respondents by Clinical Scenario

	Scenario 1(ART Coordinator)			**Scenario 2 (PMTCT Coordinator)**	
Variable	**Frequency**	**Percentage**	**Variable**	**Frequency**	**Percentage**
What is WHO clinical stage of this patient? (N=90)			**Will you place the patient on ____(N=107)**		
Stage One	3	3.3	ART for her health	48	44.9
Stage Two	10	11.1	ARV prophylaxis for PMTCT	59	55.1
Stage Three	70	77.8			
Stage Four	7	7.8			
Is the client eligible for ART (N=86)					
Yes	78	90.7			
No	8	9.3			

Table 29b shows the findings from a clinical scenario presented to the providers. The scenario was “a known HIV infected client comes to the facility with symptoms of weight loss >10%

body weight, unexplained persistent fever of > 1 month and coughing and night sweats for the past 6 months". Majority (77.8%) of the health providers indicated that the patient was in stage three, followed by 11.1% in stage two, 7.8% in stage four and 3.3% indicated stage one. Additionally, 90.7% of the health providers indicated that the patient was eligible for ART.

Table 30: Distribution of Respondents on Organizational Concern for Patient Satisfaction

Variable	Frequency	Percentage
How important is patient satisfaction to your organization (N=150)		
It's a high priority	131	87.3
It's a mid-level priority	15	10.0
It's a low priority	1	0.7
Don't know	3	2.0
Others	0	0.0
Facility has organizational Structure to assess/improve quality of care of HIV patients (N=152)		
Yes	130	85.5
No	22	14.5
Quality improvements committees are formed to improve specific aspects of HIV/AIDS services (N=152)		
Yes	124	81.6
No	28	18.4

Table 30 shows distribution of health providers on organizational concern for patient satisfaction with 87.3% of the facilities making patient satisfaction a high priority.

Qualitative Findings on Healthcare Providers' Perspective of the Quality of HIV/AIDS Care

Introduction

The purpose of this qualitative component of the quality of care study was to explore the perception of health care providers on HIV/AIDS quality of care, which is one of the objectives of this study. This qualitative component equally sought to ascertain the suitability of the health care providers in providing quality HIV/AIDS care to clients. This was done using a key informant interview (KII), with semi-structured interview questions/guide, in order to provide understanding of quality of care issues with the health care providers. Moreover, the

KII assisted the research team to strengthen and understand better the findings of quantitative analysis. The findings of the qualitative component will further add to the body of knowledge and guide policy makers in formulating policies that will improve the quality of care for PLHIV in Nigeria.

To achieve this objective, two sets of questions (Sections A and B) were developed: five questions under the demographic information (which equally sought to determine the qualifications and suitability of the health care providers for the job they are doing), and six questions under the main section – which sought to explore their perspective on HIV/AIDS quality of care issues. Six health care providers (one in each of the six geopolitical zones of Nigeria) were interviewed in view of the complexity of analysing a qualitative work (Bineham, 2006).

Results of the interviews for health care providers:

Analysis of Interview Questions for Health Care Providers

Section A: Demographic Information.

Interview Question A1: What is your title/designation?

Table A1

Categories of Responses to Interview Question A1

Categories	Frequency	Percentage
ART Coordinator/HOD Clinical	3	50.0%
Site Coordinator	2	33.3%
Medical doctor/officer in - charge	1	16.7%

As shown in Table A1 above, the predominant category of responses to the question was ART Coordinator/HOD Clinical (n=3; 50%). This was followed by Site Coordinator (33.3%), and Medical doctor/officer in-charge (16.7%)

Interview Question A2: What is your highest level of educational and degree/certificate?

Table A2

Categories of Responses to Interview Question A2

Categories	Frequency	Percentage
1st degree (M.B;B.S/B.Sc.)	5	83.3%
Post graduate (Masters)	1	16.7%

From Table A2 above, most (83.3%) of the respondents had a first degree in medicine and surgery (M.B.B.S), with only one person (16,7%) having a post graduate qualification (Master's degree) in Health Management.

Interview Question A3: How long have you been in this hospital?

Table A3

Categories of Responses to Interview Question A3

Categories	Frequency	Percentages
<5 years	3	50%
5 years and above	3	50%

Table A3 shows that 50% of the respondents have spent less than 5 years in the hospitals; while 50% of them have worked more than 5 years in the hospitals selected for the study.

Interview Question A4: How long have you occupied the current position?

Table A4

Categories of Responses to Interview Question A4

Categories	Frequency	Percentages
<5 years	4	66.7%
5 years and above	2	33.3%

Table A4 shows that majority (66.7%) of the respondents have occupied their current position for less than 5 years; while 33.3% have stayed more than 5 years in their present positions.

Interview Question A5: What are your roles and responsibilities?

Table A5

Categories of Responses to Interview Question A5

Categories	Frequency	Percentages
Coordinating HIV/AIDS programme/Clinical review of HIV/AIDS patients	6	100%

Table A5 indicates that all the respondents were functioning in the same/similar capacities in the six hospitals used for the qualitative interviews.

Section B: Perspectives on HIV/AIDS Quality of Care Issues.

Interview Question B1: In your opinion, what are the things that constitute good quality HIV/AIDS for PLHIV?

Table B1

Categories of Responses to Question B1

Categories	Frequency	Percentages
Being able to undertake CD4 count and other lab tests	5	83.3%
Doing adherence counseling	2	33.3%

Availability of drugs	2	33.3%

As Table B1 shows, most of the respondents (n=5; 83.3%) were of the view that being able to undertake CD4 count and other laboratory tests constitute good quality HIV/AIDS care for PLHIV. Some of them responded thus: "On our part too, we want to make sure that the CD4 count is done, which is one of the things we use to be able to have the criteria as to whether the person requires ARV or not" and "doing laboratory investigations". Furthermore, 33.3% of the respondents were of the view that doing adherence counselling and availability of drugs constitute good quality care for PLHIV.

Interview Question B2: How do you and other healthcare providers in ART/PMTCT services in this facility ensure that PLHIV receive high quality care?

Table B2

Categories of Responses to Question B2

Categories	Frequency	Percentages
Provision of lab facilities and doing necessary lab tests.	3	50%
Offering good adherence counseling	3	50%

As shown in Table B2 above, 50% of the respondents were of the view that they are ensuring high quality care to PLHIV through the provision of lab facilities and undertaking necessary laboratory tests. Also, another 50% were of the view that offering of adherence counselling is one of the ways they ensure high quality care to PLHIV. Some of the responses included: "provision of laboratory facilities for monitoring patients"; ''counseling the patient''; ''enroll the patient in laboratory investigations''; and ''good adherence system/counselors (from doctors, nurses, pharmacists, M&E, and adherence counselors)''.

Interview Question B3: In your opinion, what do you think needs to be done to ensure that health care providers in HIV/AIDS services are complying with the National Guidelines on ART and PMTCT?

Table B3

Categories of Responses to B3

Categories	Frequency	Percentages
Training and retraining of providers on the National Guidelines	5	83.3%
Ensuring availability of National Guidelines	2	33.3%

Table B3 above indicates that (83.3%) of the respondents were of the view that training and retraining on the National Guidelines are necessary to ensure that health care providers comply with the National Guidelines. Furthermore, 33.3% of them opined that ensuring the availability of the National Guidelines at health facilities is key to ensuring compliance to them. Some of them responded thus: ‘’quality and regular trainings on the guidelines’’; ‘’regular seminars’’; ‘’make the guidelines available’’ and ‘’conduct refresher trainings’’.

Interview Question B4: What do you think are the factors/reasons that could be militating against rendering of good quality HIV/AIDS care to PLHIV that come to this facility?

Table B4

Categories of Responses to B4

Categories	Frequency	Percentages
Lack of maintenance/dysfunctional lab equipment	3	50%

Inadequate/reduced funding	2	33.3%

From Table B4 above, 50% of the respondents were of the view that lack of maintenance/dysfunctional laboratory equipment was a major reason militating against rendering of quality HIV/AIDS care to clients that come to their hospitals. Also, 33.3% of the respondents believe that inadequate/reduced funding is hampering the quality of care they were rendering to their clients. Some of the responses included: ‘’inadequate funds’’ and ‘’inadequate laboratory services e.g. viral load, dried blood spot etc.’’

Interview Question B5a: Were appropriate resources committed to support the HIV quality of care programme in this facility?

Table B5a

Categories of Responses to Question B5a

Categories	Frequency	Percentages
No	4	66.7%
Yes	2	33.3%

With reference to Table B5a above**,** majority (66.7%) of the respondents were of the view that appropriate resources were not committed to support the HIV quality of care programme in their facility. Some of their responses included: ‘’No, the funding is decreasing and the patients are increasing’’ and ‘’well, the resources basically are the ones that the Implementing partners (IPs) put in place’’. On the other hand, 33.3% of the respondents were of the view that

appropriate resources were committed to support the HIV quality of care programme in their facility. Some of them responded thus: ‘’yes, but a lot needs to be done- more funding, more commitment from government, and IPs should not totally pull out’’.

Interview Question B5b: What do you think could be done by the government and donors to improve the quality of ART/PMTCT care in this facility and in the country?

Table B5b

Categories of Responses to Question B5b

Categories	Frequency	Percentages
Improve funding to the facility by government	4	66.7%
Subsidized or free lab tests for clients	3	50%
Good monitoring and evaluation by government	2	33.3%
Ensure provision of drugs	2	33.3%

As shown in Table B5b, the majority (66.7%) of the respondents were of the view that improved funding by government is very vital to improving the quality of ART/PMTCT care in their facilities and in the country. Some of them responded thus: ‘’Government to increase their funding’’; ‘’Services paid for should be subsidized’’; ‘’Adequate support and funding’’; ‘’Increase funding, especially on PMTCT’’; and ‘’Improve on monthly allocation to the hospital’’. Besides the improvement in funding, another area of focus is subsidized or free laboratory tests (50%). Some of the responses went thus: ‘’laboratory services should be subsidized’’ and ‘’Haematology and chemistry tests should be free by donor/government’’. Other categories of issues that relate to improving the quality of ART and PMTCT at the facilities that were elicited included: good monitoring and evaluation by government (33.3%) and ensuring effective logistics for the provision of drugs (33.3%). Here are some responses in

these directions: ‘’good monitoring and evaluation by government and donors’’; ‘’Ensure effective provision of drugs’’.

Interview Question 6: Are your staff routinely trained on HIV/AIDS services?

Table B6

Categories of Responses to Interview Question B6

Categories	Frequency	Percentage
No	4	66.7%
Yes	2	33.3%

From Table B6 above, the predominant response (66.7%) was ‘’No’’ to routine staff training; while 33.3% of the respondents answered in the affirmative. Some of the responses included: ‘’Not routinely, like many of them might be trained just once, and some of them may be trained many years ago’’; ‘’No’’; ‘’No, because not all staff have been trained, and the 3 trained staff were trained 2 years ago’’; ‘’No: only one training in the last one year for doctors and nurses’’; ‘’Yes, refresher training are conducted usually 5 times in 6 months’’; and ‘’Yes’’.

Summary of Findings

The summary of this qualitative analysis is presented below as the themes of the interview:

As earlier mentioned, the primary purpose of this qualitative component of the quality of care study was to explore the perception of health care providers on HIV/AIDS quality of care and issues relating to quality of HIV/AIDS care- in line with some of the objectives of the study.

Consequently, the following themes emerged:

- Provision of functional and subsidized/free laboratory services
- Offering good adherence counseling
- Availability of drugs (ARVs) at facilities
- Need for training/retraining of healthcare providers on HIV/AIDS services and on National Guidelines
- Funding issues.

Provision of Functional and Subsidized/Free Laboratory Services

One of the predominant themes that emerged from the qualitative interviews was the importance of provision of functional and subsidized laboratory services, as a crucial component of quality HIV/AIDS care. About 88.3% of the respondents were of the view that being able to undertake CD4 count and other necessary laboratory tests constitute good quality of care for PLHIV. Also, with regards to the question on how they ensure that clients that come to their facility receive high quality care, 50% of them talked about 'provision of laboratory facilities and doing necessary test'. Furthermore, to the question of what they thought could be militating against quality HIV/AIDS care to PLHIV in their facility, 50% of them talked about 'lack of maintenance/dysfunctional laboratory equipment'. Additionally, with regards to the question of what they thought could be done by the government and donors to improve the quality of ART/PMTCT care in their facilities, 50% of them reiterated the need to 'ensure that laboratory tests are subsidized or free for clients'.

Offering of Good Adherence Counseling

Another major theme that emerged from the interviews was the need to offer good adherence counseling to PLHIV. Reference to this was made by 33.3% of the respondents on what they thought constitute good quality HIV/AIDS for PLHIV. Similarly, in response to the question on how health care providers in ART/PMTCT services in their facilities were ensuring that PLHIV receive high quality care, 50% of them were of the view that they needed to 'offer good adherence counseling'.

Availability of Drugs (ARVs and drugs for treatment of opportunistic infections) at Facilities

One other pertinent theme that was elicited from the interviews was the need to ensure availability of drugs at the facilities. In their response to the question of what good quality HIV/AIDS care meant, 33.3% of the respondents were of the view that availability/regular supply of drugs meant good quality HIV/AIDS care for PLHIV. Also, 33,3% of the respondents were of the view that government and donors need to ensure availability of drugs in order to improve the quality of ART/PMTCT at their facilities.

Need for Training/Retraining of Healthcare Providers on HIV/AIDS Services and on National Guidelines

The imperatives of training and retraining of healthcare providers on HIV/AIDS services and on the National Guidelines were underscored. To the question on what needs to be done to ensure that healthcare providers in HIV/AIDS services are complying with the National Guidelines on ART and PMTCT, 50% of them were of the view 'training and retraining of providers on National Guidelines' were important. Furthermore, 66.7% of them affirmed that HIV/AIDS staff are not being routinely trained on HIV/AIDS services, and they expressed unhappiness about the situation.

Funding Issues

Another key theme that emerged from the interviews was funding issues. To the question of what could be militating against rendering of good quality HIV/AIDS care to PLHIV at their facilities, 33.3% talked about inadequate/reduced funding from government and donors. Consequently, 66.7% of them were of the view that government and donors need to improve funding in order to improve the quality of ART/PMTCT at health facilities and in the country.

Chapter 5: Discussion

5.1 Selected Characteristics of Clients' Service Utilization

This study examined the factors affecting the quality of ART and PMTCT services provided to HIV clients in primary and secondary health care facilities. These facilities were public, private and faith-based in ownership. Our findings indicate a high proportion of the clients were assessing HIV services at the public health facilities. This is consistent with a recent study in Nigeria (Ezechi *et al*. 2014) that the volume of patients enrolled in ART programme was higher in the public health facilities compared to private facilities. Similarly, Silva-Santisteban et al. (2013) in a study in Peru observed that majority of PLHIV accessed services in public health facilities.

Findings also showed that majority of clients assessing services were women (68.9%) compared to men (31.1%). This is consistent with findings from various studies. Bezuidenhout et al (2014) in a study on patient's satisfaction at ART treatment sites in Gert Sibande district in South Africa showed that majority (69%) of clients assessing service were women while 31% were men. Tromp et al (2014) in a study on equity in utilisation of ART services in South Africa showed that men appeared to have lower utilisation of ART services compared to women. .

Findings from this study showed that majority (22.4%) of the clients were within the age range of 30-34 years in contrast to the study in central Nigeria on patients satisfaction with ART services by Osungbade et al(2013) which showed that majority (27.1%) of all the clients assessing ART services were young people aged 15-24 years old. Furthermore, the 2008 United Nations Human Development report on Nigeria, has in past indicated that the burden of HIV infection in Nigeria is borne by young people with more females affected than males.

Our study observed that clients have knowledge of the duration of their HIV diagnosis, time they became eligible for ART and also the time of ART commencement. This level of knowledge is therefore an advantage because it provides people living with HIV an opportunity to receive information and tools to prevent HIV transmission to others. Besides, lack of clear information or instruction on medication, limited knowledge on the course of HIV infection and treatment have been identified as possible barriers to patients' adherence to ART (WHO, 2013). Most of the clients in this study also maintained their existing health facilities and this could facilitate adherence.

5.2 Client Satisfaction with ART and PMTCT Services at Health Care Facilities

It is important to note that various studies have revealed the importance of patient satisfaction as a vital issue in patients' care, and that satisfaction predicts treatment utilization and adherence (Roberts, 2002; Mahon, 1996). Patient satisfaction is one of the vital components for the success of any healthcare service, especially in ART units which play a vital role in the lives of thousands of HIV patients (Bezuidenhout et al, 2014).

Majority of the clients in this study also rated the care received in their respective facilities as very high because of their satisfaction with various aspects related to service provision. Such responses from clients as regards their level of satisfaction with respect to perceived quality of services rendered and competence of health providers were remarkably high. The areas with high client satisfaction include availability of adequate and appropriate equipment to effectively carry out HIV services (92.2%), clean environment at all times (96.9%), clearly written sign-posted rooms and departments (91.9%), functional toilets (84.9%), availability of adequate and regular water supply (86.3%) as well as clinic opening and closing hours (95.2%). All these, show that health facilities comply with minimum standard requirements for health care provision. Overall 68.7% of the clients reported to be very satisfied with the care provided to them at the health facilities. This is similar to findings from another study in South Africa which showed that with regards to the overall reflections from the patients interviewed on satisfaction of care, majority (98%) of the patients were satisfied with the care they received from the ART sites (Bezuidenhout et al, 2014).

5.3. Clients' Perspective on Quality of Care

Certain domains were used to assess clients' perspective on technical quality and competence of health providers in the health facilities. A high proportion of clients' in this study reported that the health providers examined them at scheduled visits (91.9%); ensured maintenance of confidentiality of client information (97.9%); answered their questions concerning their health to their satisfaction (98.6%); treated clients respectfully and politely at scheduled appointments (97.9%) and were available at emergency and unscheduled visits by clients' (90.9%). These findings are quite similar to a study that was done in Vietnam to assess quality of care were majority of clients (50%) were completely satisfied with:

- Confidentiality and respects of patients' privacy (60.1%)
- Competence of HCWs (52.6%)
- Consultation, explanation and guidance of HCWs (52.5%)
- Responsiveness of the HCWs to patients' questions and requests (51.4%) (Bach Xuan Tran, 2012).

It corroborates with another study in South Africa which showed that most of their patients interviewed (98%) agreed that their healthcare provider listened to their problems. Majority of the patients had an opportunity to ask their healthcare provider questions (93%) and were satisfied with the explanations provided (98%). A high proportion of the patients reported that the healthcare provider who attended to them was polite (98%) (Bezuidenhout et al, 2014).

Other dimensions of quality of care were assessed in this study which are: access to health facilities and time spent accessing treatment. These dimensions have been cited in various studies as barriers to quality services that could affect health outcomes. Findings from this study showed that 44.2 per cent of clients reported an average waiting time to see a doctor/health care provider to be "within 30 minutes and one hour"; with 32.2 per cent reporting that it takes them less than 30 minutes. On clinic days, more (42.7%) of the clients reported they spend 2 hours and above from arrival to departure while only 12.5 per cent reported less than 30 minutes. With regards to access to treatment in health facilities, more than four-fifth (89.7%) of the clients stated that the health care facility was accessible to them with only 10.3 per cent reporting otherwise. Majority (37.6%) of the clients stated a distance of less than 2km between their places of residence and the health facility. This is similar to findings in a study in Central Nigeria which showed a median time spent waiting to see a doctor as 40

minutes and a median time spent in ARV clinic from arrival to exit of patients was 300 minutes (i.e.5hours) (Osungbade et al, 2013)

5.4. Determinants of Perceived Improved Health Status among HIV Clients

This study observed a high level of clients' description of their health since commencement of treatment as 'much better' and 'better'. Furthermore, more than half (70.8%) reported they have noticed improvement since commencement of treatment at health facilities.

This study did not reveal any particular difference in clients' outcome of care by type and ownership of health facility. Though from other studies, facilities run by associations or NGOs have been reported to have the lowest quality of care, and the private health facilities have the highest quality index in Burkina Faso (Kazianga et al. 2008); Appropriate engagement of HIV/AIDS patients in care, immediately after diagnosis and consistently thereafter, has been documented to have a profound impact on efforts towards zero new infection (WHO, 2013; Losina et al. 2010). Thus, our study observed that the frequency of appointments/visits clients have with health care providers is associated with the outcome of care they receive. More (99.1%) of clients who visited the health facilities every month had their health conditions improved compared to those who did so every three months and once in six months. This could be corroborated by the study conducted by Hyun Cho et al. (2004) which infers that as patients become more informed about the health care service and their physician through frequent visits, they are able to incorporate a wider range of factors into their assessment of overall service quality. However from a client perspective, it was observed in another study that the frequency of clinic visits for follow-up care was cited as causing fatigue and thereafter loss to follow up especially when heightened by the distance to the health facility as well as busy patient schedules (Wachira et al, 2014).

No significant differences were observed in clients' level of outcome when cross-tabulated with socio-demographic characteristics such as sex, ethnicity, age or employment. This is consistent with some other findings (Beck et al. 1999; Hall and Dorman, 1990) who observed in their studies that satisfaction scores did not differ significantly by gender, age, ethnic group and employment status. It is well documented that quality care in ART health facilities is essential in enabling patients to cope with their condition and its therapy (Castillo et al. 2004). Additionally, this study found that average waiting time before collection of drug was

associated with clients' outcome of care. Ninety-nine per cent of clients who waited just less than 30 minutes before collecting their drugs on clinic days had improved health outcomes compared to those who collected theirs within one to two hours. This result portrays a vivid improvement in HIV/AIDS service provision in Nigeria, and is encouraging for the clinic staff and health facility authorities especially to further sustain such improvement. This is because, according to the WHO Consolidated ARV guidelines 2013, in many settings with a high burden of HIV infection, hospitals have long waiting times because of a large flow of patients needing care.

There was no difference between outcome of care of clients who paid for the services received and those who did not. This is because the health conditions of both categories of clients improved irrespective of payment or not. The study also showed that various facilities had technical competencies in the provision of HIV/AIDS-related services such as the CD4 count, examination of clients at each visit and others. There was no association observed between technical quality/competence of health facility and outcome of care. However, staff attitude towards clients especially in the area of providing satisfactory answers to their questions was observed to improve clients' health outcomes. Other studies (Getenet et al. 2008) have observed also that health workers explanation about required tests, treatment, expectation, the need for regular follow up, drugs, ease of getting information, competence and skill, respect to patients were key qualities appreciated by the clients.

It is well documented that the issues of distance is detrimental to clients' access to healthcare services. This study observed that accessibility to health facility and distance between health facility and clients' place of residence affects the level of outcome of care. Clients who reported having access to health facilities had an improved condition of health compared with those who have limited access. This suggests that it is necessary that health facilities are closer to patients and as noted, the widely recommended maximum time to access healthcare is 30 minutes (Soai, et al. 2012). The National Guideline for HIV and AIDS Treatment noted that distance to health facility is among the factors that cause poor adherence among HIV positive individuals. Earlier studies in the country (Stock, 1987) found that at a distance of 5 kilometres from a dispensary, per capita utilisation fell to less than one-third. In addition, other studies (Schoeps et al; 2011) have emphasized the importance of geographic accessibility of health

care while distance of available hospital from home was found to have inverse relationship with utilization of healthcare facilities either public or private in Kogi State (Awoyemi, Obayelu and Opaluwa, 2011).

This study observed that improvement in CD4 of clients was the highest predictor of quality of care. Others include clients' adherence to hospital appointments, providers' punctuality on scheduled clinic days, and easy accessibility of facilities. Adherence to hospital appointments by clients was observed to be about 17 times more likely to determine the quality of care received than those who did not adhere to hospital appointments. Implicitly, missing hospital appointments may have serious consequences on health outcome. These findings are consistent with other research works which observed the importance of keeping scheduled hospital appointments on the improvement in quality of care. George and Robin et al. (2003) identified that non-attendance at scheduled appointments represents a significant cost to health care system and resulted in disruption of daily work planning. Furthermore, Husain-Gambles et al. (2004) and Perron et al. (2010) observed on the side of patients that missing appointment schedules could lead to the deterioration in the quality of care as well as dissatisfactions that may arise due to delays in making new appointments.

These factors are also similar to findings from another study which showed that factors associated with satisfaction level and quality of care were patient provider interaction ($p=0.002$); behaviour of staff ($p=0.005$); physical facilities ($p=0.005$); cleanliness (0.002), drinking water (0.006); confidentiality ($p=0.004$), waiting time to meet the doctor ($p=0.03$) and total time spent in hospital ($p < 0.001$) (Devnani et al, 2012).

According to Alhassan et al. (2014) staff punctuality is an aspect of the functional dimension of quality health care. Thus, this study observed that punctuality on scheduled clinic days by providers was key in determining the extent to which the outcome of care of clients improved. Providers' punctuality on scheduled clinic days was about ten times likely to result in an improved outcome of care for clients than when they were not punctual. That health outcome improved with providers' ability to maintain punctuality as scheduled is consistent with the findings from Egan and Kadushin (2007) that health providers value punctuality as very important in health service provision which is time-bound. Other findings from the study 'Client Perspective of Quality of Health Care Service' in Uganda by Brawley et al. (2000), it

was observed that clients would like to have increased access to health workers especially in the areas where the providers are willing to serve them punctually, and with shorter waiting times.

In another study by Babalola D. et al. (2013), one of the contributing factors for the prolonged patients' waiting time identified includes physicians' punctuality in the clinic. Also, in another study 'Access to HIV treatment and care among commercial sex workers in Malawi' Chikaphupha et al. (2009) noted that public health care workers that were not being punctual was among the challenges identified by commercial sex workers in accessing HIV care, treatment and support.

Finally, this study observed that improvement in CD4 was the highest predictor of quality of care. It is a widespread knowledge that when clients commence treatment and care, the stage of illness is determined as well as evaluation of eligibility for ART by CD4 cell count less than 500cells/mm^3 or AIDS-defining opportunistic infections.

5.5.0 Providers' Perspectives on Quality of Care

5.5.1 Extent to which Providers of ART and PMTCT Services are Complying with ART and PMTCT Quality of Care Standards for PLHIV at Health Care Facilities

To a large extent, this study was able to elicit the perspectives of health care providers on quality of care for PLHIV, and determine how they were complying with ART and PMTCT quality of care standards for their clients. According to the WHO (2004),"Standards are expectations of performance, and one of the most powerful tools that can move organisations towards better care, shape positive behaviour, remove unwanted variations in care process and provide a framework for measuring results". It also clearly stated that the major functions executed in every health care facility determine the degree of the quality of the services and the extent to which the desired outcomes are realised. As stipulated by WHO (2004), some of the major categories of standards for HIV care include: 1. Functions related to health care delivery (management of opportunistic infections; provision of ART; support for adherence to treatment; PMTCT; and reduction of stigmatization); 2. Functions related to links with communities (community links); and 3. Functions related to service delivery (management of

drugs and supplies; laboratory management; leadership and human resources; information management; and financial management).

This study observed that majority of the health providers for ART and PMTCT services were nurses, mid-wives and CHEWs. This may not be unconnected with the fact that nurses play a crucial role in the management of HIV and AIDS patients. This observation and position are buttressed by findings in a study in the USA by Wilson et al., (2009), which examined the quality of care provided by Nurse Practitioners (NPs), Physician Assistants (PAs), and Physicians. The study showed that for the parameters examined, the quality of HIV care provided by NPs and PAs was similar to that of physician HIV experts, and generally better than physician non-HIV experts. Their increased level of importance has prompted the World Health Organisation (WHO) and other organisations to initiate programmes that would build health care workers' capacity in relation to HIV and AIDS management and care. This is to further promote task shifting.

With respect to services provided and the care process, the study observed that various services were provided in the health facilities, ranging from: HIV/AIDS testing; counselling; antenatal care (ANC); prevention of MTCT; postnatal care; CD4 count testing; TB screening and treatment; treatment of opportunistic infections; awareness creation on prevention of HIV/AIDS among others. Masako (2006) had a similar observation in Tanzania where all health facilities such as government, private, faith-based and those owned by NGOs provided counselling and support services. The WHO (2009) initiated capacity programmes for management of HIV and AIDS in health care facilities in almost all the areas identified above: education and information on HIV and AIDS; preventing HIV transmission in health care settings; preventing HIV transmission through sex; managing sexually transmitted infections; preventing mother to child transmission; Voluntary Counseling and Testing (VCT); preventing the progression of HIV infection to AIDS; quality care for PLHIV and clinical management and treatment for PLWHA.

Training and retraining of health workers of all types and at all levels have been identified as an appropriate measure to reduce impediments to care (Friedland, 1995). This study observed that health care providers were trained to carry out responsibility of provision of care to clients effectively as well as participation in refresher courses in order to update their knowledge, as evidenced by the finding that 93.6% of the staff were effectively trained to carry out ART and

PMTCT care services; while 76.4% had attended refresher trainings. This is consistent with the findings of Umar et al. (2012) in Sokoto where more than four-fifth of the health providers working with people living with HIV/AIDS had ever attended training. In addition, it is consistent with the findings of Li et al. (2007) in a study in China that HIV training is likely to help providers identify institutional policy and procedure support.

Furthermore, this study observed that most of the health providers have the required level of experience to provide services to clients. Findings revealed that more 70 per cent of them have worked in their respective facilities for over three years with more than half (53.5%) working for more than five years. More so, a greater proportion (89.2%) of the providers had more than five years of experience in medical practice. This is higher than that reported by Umar in their study in Sokoto that 61.1% of health providers had greater than five years working experience in HIV/AIDS service provision. However, it shows that most Nigerian healthcare providers working in HIV/AIDS service provision have gained the required knowledge and experience needed to adequately perform their duties. This assertion is buttressed by the responses of most of the providers to the questions on a clinical scenario that they were given: "a known HIV infected client comes to the facility with symptoms of weight loss >10% body weight, unexplained persistent fever of > 1 month and coughing and night sweats for the past 6 months". Majority (77.8%) of the health care providers indicated that the patient was in stage three (3), and 90.7% of them indicated that the patient was eligible for ART. To corroborate this, the key informant interview revealed that 50 per cent of those interviewed had worked in the hospital for five years or more.

Health care providers reported carrying out physical examinations on their clients on each clinic visit, and clients were counselled on drug use (adherence counselling). Clients were also referred to support groups, and were routinely screened for TB. In ideal situation, CD4 count is essential for ART initiation and subsequent monitoring of the patients (MOH, 2009). The key informant interview (KII) observed that in the opinion of majority (83.3%) of health providers, what constituted good quality of HIV/AIDS for people living with HIV/AIDS was ability able to undertake CD4 count and other laboratory tests. In a KII finding, the providers said "On our part too, we want to make sure that the CD4 count is done, which is one of the things we use to be able to know the criteria as to whether the person requires ARV or not" and "doing laboratory investigations". This means that along with other tests, the serial determination of

CD4 count will help monitor improvement in the immune system of a patient, staging of the disease, guidance for treatment, and to predict the prognosis of the disease.

Other key findings of this study that demonstrate health care providers' efforts at complying with ART and PMTCT quality of care standards for PLHIV include the fact that facilities had in place organizational structures to access and improve quality of care of HIV patients. In addition, quality improvement committees were formed by respective facilities to improve specific aspects of HIV/AIDS services. The study also observed that majority of the health facilities had the current ART and PMTCT National Guidelines, and majority (83.3%) of the health care providers buttressed the importance of their being periodically trained and retrained on the National Guidelines on ART and PMTCT in order to ensure that they comply with the Guidelines. This is in line with the stipulations in the National Guidelines on the importance of training and re-training of staff members to effectively provide HIV/AIDS services. This view is consistent with statement in Kenya National Guideline that service providers should receive adequate training, mentorship and supervision, and must adhere to the required policies and standards outlined in the national guidelines.

5.5.2 Quality of ART and PMTCT Issues at Health Facilities that could contribute to Policy, Planning and Implementation of Quality Improvements Measures

One of the objectives of this study was to elicit quality of ART and PMTCT issues at health facilities that could contribute to policy, planning and implementation of quality improvement measures. The key informant interviews among the health care providers assisted in addressing this objective. This study, revealed from providers' perspectives, some issues that were militating against rendering of good quality HIV/AIDS care to clients who visit their respective facilities. Foremost of the issues include lack of maintenance or dysfunctional laboratory equipment and inadequate funding. The need for increased funding was also emphasized since current developments in HIV interventions and treatment guidelines (like commencement of ART using CD4 count of <500cell/ml) demand more resources. Besides, inadequate levels of funding may cause more HIV transmission thereby increasing HIV incidence and prevalence, and may require more expensive efforts to control (ICSS, 2013). Majority of the health providers pointed out that appropriate resources were not committed to support the HIV quality of care programme in the facilities. In their words, "No, the funding is decreasing and the

patients are increasing'' and ''well, the resources basically are the ones that the implementing partners put in place''. The decrease in funding impacts HIV and AIDS patients' ability to seek care and medication because decreasing donor funding threatens service provision and sustainability due to high cost.

On the other hand, health care providers believed that for government and donors to improve the quality of ART/PMTCT care in health facilities, there is a need for improved funding to health care facilities; provision of subsidized laboratory test for clients; good monitoring and evaluation by government; and provision of drugs. Provision of subsidized/free laboratory tests for HIV clients and ensuring availability of ARVs and drugs for opportunistic infections are crucial to sustaining the gains already made in the fight against this devastating epidemic; consequently, frantic efforts should consistently be made to ensure these issues are addressed. Provision of subsidized/free laboratory tests should also encompass provision of requisite laboratory equipment (like CD4 machine, viral load/PCR machines, and GeneXpert machines- for rapid and effective TB diagnosis) and consumables. Furthermore, it is imperative for the government and donors to strengthen HIV Monitoring and Evaluation (M&E), through improved funding, capacity development of M&E staff at all levels, and deployment Information Technology (IT) in the capturing, collation, transmission, analysis, and dissemination of HIV data.

Chapter 6: Conclusion

The objectives of this study to determine factors predicting perceived quality of ART and PMTCT services being provided to HIV clients in Primary and Secondary health care facilities and to ascertain patient satisfaction with these services at the Primary and Secondary health care facilities were met. The focus of this study was only on HIV/AIDS patients attending primary and secondary hospitals that are public and private in Nigeria. Majority of the patients felt better or their health status improved since commencing treatment and care.

The predictors of improved health outcomes HIV/AIDS clients receiving treatment at health facilities were: adherence to hospital appointments by clients; providers' punctuality on scheduled clinic days; patients with easily accessible facility and patients with improvement in CD4 count. Additionally, improvement in CD4 was the strongest predictor of quality of care followed by adherence to appointment and easily accessible facility. The least predictor was providers' punctuality on scheduled clinic days. Therefore, investing in CD4 count as an important laboratory test, educating patients on adherence to hospital appointment, educating health providers on the need for punctuality and improving access and reach to health facilities by scaling up HIV services at the primary healthcare level will contribute greatly to quality of care in our ART and PMTCT services delivery programs.

Lastly, further studies are needed on quality of care by increasing the number of states from 12 to 18 with larger sample size to increase the precision of the estimates. Researches are also needed to substantiate whether the reasons for improvement in CD4 and its determining effect on quality of care among patients is linked with greater involvement and HIV/AIDS awareness in Nigeria.

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