HIV/AIDS PATIENT EXPERIENCE AND FACTORS ASSOCIATED WITH SATISFACTION IN DIFFERENTIATED SERVICE DELIVERY IN KIAMBU COUNTY

BEATRICE MAY

H70/74385/2014

Telephone: 0722320071

Email: beatricemay56@gmail.com

DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR A MASTER OF SCIENCE (MSC), HEALTH SYSTEMS MANAGEMENT DEGREE AT THE SCHOOL OF PUBLIC HEALTH; THE UNIVERSITY OF NAIROBI.

NOVEMBER 2021

DECLARATION

I declare that this study is my original work and has not been submitted for a degree award in this or any other university. All resources contained herein have been duly acknowledged.

Signature: _____ Date: 08/12/2021

Name: Beatrice May Onyango

Registration number: H70/74385/2014

Supervisor

Signature: _____ Date: 15/12/2021

Professor Joseph Wang'ombe

Department of Public and Global Health,

Faculty of Health Sciences,

University of Nairobi.

Signature: _____ Date: 16/12/2021

Professor Joyce Olenja

Chairman,

Department of Public and Global Health,

Faculty of Health Sciences,

University of Nairobi.

ACKNOWLEDGMENT

Acknowledgement goes to Prof. Wang'ombe for direct mentorship, coaching and invaluable guidance throughout the process

Appreciation goes to my family for the support, care and encouragement through the long nights and times when I almost gave up.

Appreciation also goes to several friends for encouragement and peer insights to the paper.

Special thanks to staff of University of Nairobi, School of public Health for the helpful relationship during the development of the paper.

Last and most important, Thanks to God Almighty; Covenant keeper who saw me through the seasons.

Contents

DECLARATION i
ACKNOWLEDGMENT i
LIST OF ABBREVIATIONS vii
OPERATIONAL DEFINITIONS viii
LIST OF FIGURES x
LIST OF TABLES xi
ABSTRACT xii
CHAPTER 1: INTRODUCTION 13
1.1 Background 13
1.2 Problem Statement 21
1.3 Conceptual Framework 25
1.4 Research Question/s 26
1.5 Study Objectives 26
1.5.1 General objective 26
1.5.2 Specific Objective 27
1.6 Study Variables 27
1.6.1Independent variables 27
1.6.2 Dependent Variable 28
1.7 Hypotheses 28
1.8 Justification 28
CHAPTER 2: LITERATURE REVIEW 30
2.1 Introduction 30
2.2 Overview of patient satisfaction 30
2.3 Patient characteristics and satisfaction 30
2.4 Access to health care services 32
2.5 Health provider charecteristics and care provision 34
2.6 Gaps Identified 34
CHAPTER 3: METHODOLOGY 35
3.1 Study design 35

3.2 Study Area 35
3.3 Study population 36
3.4 Inclusion criteria 36
3.5 Exclusion criteria 36
3.6 Sample size 37
3.7 Sample selection 37
3.8 Data collection tools and techniques 38
3.9 Validity 39
3.10 Ethical considerations 39
3.11 Data Quality Assurance 40
3.12 Data collection 40
3.13 Study flow 41
3.14 Data Analysis 42
3.14.1 Quantitative data 42
3.14.2. Qualitative data 43
CHAPTER 4: RESULTS 44
4.1 Introduction 44
4.2 characteristics of study participants 44
4.3 Relationship between patient characteristics and satisfaction 45
4.4 Relationship between access and patient satisfaction 48
4.5 Relationship between health care worker characteristics and patient satisfaction 50
4.6 Overall patient satisfaction with differentiated services 51
4.7 Directional and symmetric tests 51
4.8 Qualitative analysis 52
4.8.1 Convenience of proximity to health facility 53
4.8.2 Reasons of choice of facility 54
4.8.3 Waiting time for stable patients on differentiated care compared to unstable patients 54
4.8.4 Receipt of all services 55
4.8.5 Benefits experienced since starting differentiated care 56
4.8.6 Health care worker interaction 56
4.8.7 Duration for interaction with health care workers during a clinic visit 57

4.8.8 Joint decision making 57
4.8.9 Extent of satisfaction with differentiated services 58
4.8.10 Recommendations of focus group participants on differentiated service delivery 58
4.8.11 Prevailing themes 60
CHAPTER 5: DISCUSSION 61
5.1 Patient characteristics and satisfaction 61
5.2 Access and patient satisfaction 62
5.3 Health care worker characteristics 64
5.4 Study Limitations and delimitations 64
5.5 Strengths 65
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS 66
6.1 Conclusion 66
6.2 Recommendations 66
6.2.1 To health care workers and program managers 66
6.2.2 To Facility Managers 67
6.2.3 To Sub-County Health Management Team 67
REFERENCES 68
7.0 APPENDICES 71
7.1 Standard package of care 71
7.2 Differentiated care based on initial patient presentation 72
7.3 CONSENT FORM ENGLISH VERSION 73
7.4 CONSENT FORM KISWAHILI VERSION 76
7.5 QUESTIONNAIRE 79
7.6 FOCUSED GROUP DISCUSSION GUIDE 84
7.7 ETHICAL BOARD APPROVAL 86
7.8 KIAMBU COUTY RESEARCH APPROVAL 87
7.9 NACOSTI APPROVAL 88

LIST OF ABBREVIATIONS

AIDS-	Acquired Immunodeficiency Syndrome
ART-	Anti-Retroviral Therapy
CD4-	Cluster of Differentiation 4
DSD-	Differentiated Service Delivery
FGD-	Focused Group Discussion
HIV-	Human Immunodeficiency Virus
NACC-	National AIDS Control Council
PLHIV-	Persons Living with HIV
UNAIDS-	Joint United Nations Program on HIV/AIDS
WHO-	World Health Organization

OPERATIONAL DEFINITIONS

CD4	A measure of a type of immunity cells in the blood used to determine a person's degree of immunosuppression
Patient satisfaction	Evaluation based on fulfillment of expectation regarding the access to health care and health care received at the health care facility
Health Provider	An individual that provides health care services
Differentiated service	Service-delivery models that are adapted to address the specific requirements of the continuum of prevention, care and treatment for a subgroup of clients.
Well Patient	A HIV infected patient that may be newly diagnosed and is presenting with no major health concerns and requiring less vigorous approach to management other than treatment initiation and monitoring at time of enrollment
Advanced patient	A HIV infected patient that may be newly diagnosed and presents with opportunistic infections or complicated clinical issues that require close monitoring at time of enrollment
Stable Patient	Patients who have completed a year of treatment on their current regimen, have no active opportunistic infections, are virally suppressed and do not require frequent or close clinical monitoring

Unstable Patient	Patients who, even after completing one year of treatment, have reason for close or frequent monitoring for one reason or the other e.g. opportunistic infections, poor adherence scores, viremic etc.

LIST OF FIGURES

Figure 1: Conceptual framework …….. 24

Figure 2: Research design: adapted and modified from (W. Creswell, 2000) …….. 33

Figure 3: Study flow ……...34

LIST OF TABLES

Table 1: Sampling …….36

Table 2: Socio-demographic characteristics ……..43

Table 3: Socio-demographic characteristics (Continuous data) …….44

Table 4: Patient characteristic and satisfaction ……..44

Table 5: Responses to questions testing knowledge ……..46

Table 6: Access and patient satisfaction ……47

Table 7: Health Care worker characteristics and satisfaction ……49

Table 8: Overall patient satisfaction with differentiated care ……50

Table 9: Results of directional and symmetric tests ……..51

ABSTRACT

Background Differentiated service delivery, a model that was fashioned to address the specific requirements of the continuum of HIV prevention, care and treatment for a sub-type of clients, was rolled out in Kenya in 2016 in response to both health care workers' and patients concerns. Health care workers were concerned about; high and rising patient workload contributed to by stable clients who did not require frequent clinic visits, quality of care for patients was compromised due to many patient visits in a day and limited resources (space, time, work force). The patients' concerns were; long waiting time for drug refills, frequent clinic visits even when they did not feel unwell. that could lead to frequent absenteeism from work and possible loss of employment and dissatisfaction with access to treatment.

Aim The aim of the study was to assess determinants of patient satisfaction among stable patients enrolled in differentiated service delivery in selected health facilities in Kiambu County.

Method The study was a mixed method cross-sectional survey to identify the determinants of satisfaction among stable HIV positive patients enrolled in differentiated service delivery. In the quantitative arm, a structured questionnaire was administered to 404 participants across six health care facilities who were HIV positive male or female patients 20 years and above and had been enrolled in differentiated service delivery. Qualitative data was collected concurrently through Focused Group Discussions (FGDs) systematically selected. Analysis for quantitative data was two pronged; exploratory analysis to get preliminary patterns followed by inferential statistics to analyse relationship between variables of interest.

Identified prevailing themes in qualitative arm were then integrated with significant values in quantitative data.

Results High levels of patient satisfaction were reported. Majority of the participants (99%) reported being either satisfied (45%) or being Very satisfied (54%) n=404. Patient knowledge waiting time, savings in time and perception on cost reduction as well as health care worker respect had the strongest associations to satisfaction with differentiated services ($P < 0.05$).

Conclusion Patients enrolled in differentiated service are satisfied with the services offered under the model.

CHAPTER 1: INTRODUCTION

1.1 Background

The global HIV burden stands at an estimated 37.7 million People Living with HIV (PLHIV) and 1.5 new infections were recorded in 2020 with 27.5 million accessing Anti-retroviral Therapy.(UNAIDS, 2021) Since its discovery, it continues to be a communicable disease of public health concern (UNAIDS, 2018) being termed as one of the greatest threat to humankind and a fast growing epidemic at one point. In 1996, 15 years after its discovery, 4.6 million deaths had already been reported and 20 million were living with the virus; 15 Million of who were reported to be in Sub- Sahara Africa (Knight, 2008). By 2005, over 40 Million people were living with HIV and an estimated 3.1 Million deaths had taken place that year alone.

In Eastern and Southern Africa, 20.6 Million PLHIV with 670,000 new infections recorded in2020 while the treatment coverage stood at 77% (UNAIDS, 2021) Sub-Saharan Africa contributes 66% of the global HIV burden and Kenya contributes 7% of new HIV infections in East and Central Africa after South Africa (33%), Malawi (16%) and Tanzania (8%) (UNAIDS 2018)

Kenya having a population of over 40 million by end of 2020 had an estimated 1.4 million PLHIV and decline in prevalence of 4.2 and incidence of 1.15 from 5.7 and 3.06 respectively in 2010(UNAIDS, 2020).

Since the introduction of antiretroviral therapy in the early 1980's, continuous research in the pharmaceutical field has led to new drug formulations and simpler treatment regimens (Krentz HB *et al*., 2012). This has also meant that the drugs have become more effective, safer and easier to access (Vella *et al.*, 2012). These improvements have contributed greatly to a decline in infection

rates and AIDS related mortality and resulted in improved health outcomes for those infected with the virus including policy changes.

The criteria used to determine whether an individual qualified for antiretroviral therapy was initially based on CD4 levels (a measure of a type of immunity cells in the blood used to determine a person's degree of immunosuppression) or on clinical staging (a set of standardized classification of HIV associated clinical diseases that guide medical decision making for patients with HIV/AIDS) especially for resource limited settings without access to laboratory services(WHO, 2006). In 2006, the HIV treatment guidelines suggested that CD4 levels of below 250 cells/mm^3 or Clinical stage 3 or 4 warranted a patient to be initiated on Anti-Retroviral Therapy (ART) but opted to delay treatment for a patient with CD4 counts of more than 350 cells/mm^3(WHO, 2006). Research, however, demonstrated a high risk of HIV associated mortality if ART was started at very low CD4 cell counts due to delay in immune-reconstitution and in 2011, the CD4 cut-off for ART initiation was revised to 350cells/mm^3 in line with WHO recommendations (Kenya Ministry Of Health, 2011). In 2013, the World Health Organization (WHO) recommended even higher CD4 linked treatment considerations of starting treatment for all patients with CD4 levels of less than 500 cells/mm^3 regardless of clinical staging (WHO, 2013)

The findings of the study conducted by the INSIGHT START group published in 2015 influenced another change after it found that starting ART soon after HIV diagnosis regardless of CD4 count had significant benefits.(Fuentes *et al.*, 2015)

In the conventional model of care, clinical and laboratory monitoring for HIV patients was largely characterized by regular and frequent appointments of intense clinical appointments at 2,4,8 and 12 weeks. The intense follow up was until a patient had stabilized on therapy, followed by 6

monthly CD4 monitoring and monthly drug pick-ups even when they had stabilized (WHO, 2006). In some African settings, there had been revisions increasing appointments to 3-monthly over time, but it still remained inefficient especially in Sub-Saharan Africa because it is still the most affected by HIV. The changes in policy over the years led to, among others benefits, improved treatment outcomes and reduction in HIV related mortality inferring higher survival rates that saw a steady rise in the number of patients being managed for HIV in addition to non-communicable diseases in a health care system that is already burdened(Geldsetzer, Ortblad and Bärnighausen, 2016). This paved way for modification of HIV service delivery.

In 2016, International AIDS society published a decision framework called Differentiated Service Delivery (DSD)for antiretroviral therapy delivery in a different way and was informed by client and health care worker perspectives(International AIDS Society, 2016). These perspectives were collected in the previous model of frequent clinical monitoring. Healthcare workers were concerned about high and rising patient workload contributed to by largely stable clients, quality of care for many patients per day, limited resources (space, time, work force). Patients expressed concerns with long waiting time for ART refills, why they needed to take drugs and come to the clinic when they did not feel unwell, fear of loss of employment because of frequent clinic visits and dissatisfaction with access to treatment (International AIDS Society, 2016).

Differentiated service delivery refers to service-delivery models that are adapted to address the specific requirements of the continuum of prevention, care and treatment for a subgroup of clients. (Torpey *et al.*, 2016). In HIV, differentiated service is defined as a client centered approach aimed at improving clinical outcomes for the patients and increasing efficiency of the health system as the core principles. It is assumed that when health care provision is organized around the needs and preferences of the patient, it will increase retention and viral suppression and for the health

care system; re-allocation of resources after a reduction of the clinical burden from stable patients (International AIDS Society, 2016)

For targeted care to be given in differentiated service model, patients are categorized into groups. The first categorization takes place at enrollment after a positive HIV test. Services are tailored depending on whether the patient is enrolled with advanced disease or not. Those without advanced disease are termed "well". Those with advanced disease either present with opportunistic infections or complicated clinical issues that require close monitoring, consultant review or referral to first stabilize them before starting HIV treatment. Those categorized as well require a less vigorous approach with more emphasis on early ART start and adherence. In addition to a standard package of care (Ref. Appendix 1), each arm receives a differential care as spelt out in Appendix 2

The 2nd categorization takes place after the patient completes one year of ART at which point the patient is classified as either stable or unstable. Again, the classification determines the care requirements. The criterion includes clinical presentation, an adherence score, viral suppression, age, nutritional status, completion status of Isoniazid preventive therapy and pregnancy status for women.

When differentiated care was introduced in Kenya, different considerations had to be made for a patient to be considered as stable. One had to be aged 20 years or over with a Body Mass Index (BMI) of not less than 18.5, have completed a year of treatment on their current regimen, have no active opportunistic infections in the last 6 months, adherent to scheduled clinic appointments for the last 6 months, completed 6 months of Isoniazid preventive therapy (IPT), achieved a viral load (VL) of less than detectable levels in their most recent laboratory investigations (in the last 6

months), not be pregnant or breastfeeding and the health care team comfortable with their progress. All others would be considered unstable though there is a guidance available for stable pediatrics and adolescents in the disseminated 2018 ART guideline that extended the age limit for enrollment of stable adolescent from the age of 15 into DSD.(NASCOP, 2018)

Differentiated Service Delivery is sensitive to the package of care offered, location of services and frequency of services. This is different from the previous model of service delivery that seemed to give similar services at a location determined by the health care worker at frequent intervals to all despite different needs. This shift aimed to achieve four major goals especially for the stable patient;

a. Reducing the frequency of visits to the facility

This is achieved by the clinician giving drug prescriptions to cover a longer duration since the patients are clinically stable. By doing so, it becomes possible to separate drug refills (collection of drugs) from clinical visits (consultation, lab tests and counselling). Of importance to note is that the maximum duration for drug prescriptions is dependent on regulations. The frequency of drug refills can be 2-4 monthly while for clinical reviews can be bi-annual or annual depending on the country policy and facility and patient agreement. With this structure, interaction with the health system can be reduced to 3 or 4 visits a year down from monthly; and even with the reduced visits, the duration spent for drug refills is minimal because there is no interaction with the clinician unless it is a consultation visit. During ART refills, this models advocates for fast tracking. i.e. minimal or no waiting time. The process described implies the patient saves on transport cost and time spent at the facility and the

facility is able to decongest the clinic, which also grapple with space constraints, and focus on patients who have advanced disease or are unstable.

b. Increasing access to treatment and services

Increasing access and treatment and services is made possible through decentralization of services either through referral of patients to receive them in facilities closer to where they live or delivering ART to them at the community especially because in the past, the custom has been to limit ART availability and collection to clinic operating hours so the model makes effort to extend clinic operating hours and allow for weekend drug collection where possible.

The options available for community ART refills are health care worker or peer led distribution to either an individual or group at agreed upon locations called ART distribution points.

c. Task shifting

With an estimated HIV prevalence of 1.4 Million in Kenya, there is need for innovative service delivery where human resource for health is concerned. This is because of the shortages at 124 physicians, nurses and midwives per 100,000 people; lower than the WHO recommended threshold of 445 physicians, nurses and midwives per 100,000 people (WHO, 2016). Differentiated service delivery addresses this challenge by reducing workload through decongestion of clinic (as describe above) and thereby requiring no additional staff. The tasks are also well distributed across cadres and incorporate the engagement of lay workers to handle counselling, health talks, appointment scheduling and ART distribution; roles that were originally being handled by nurses, clinicians or pharmacy staff. This is based on the WHO recommendation that:

1. When trained and supervised, lay and community health workers can distribute and distribute and dispense ART
2. Trained non-physician clinicians, midwives and nurses can initiate and maintain ART

This in effect contributes to improved access to services and limiting time of interaction with the health system.

d. Optimizing the continuum of services

This involves synchronizing the services a patient requires which are; ART initiation / refills, Clinical monitoring, adherence support, laboratory tests, opportunistic infection prophylaxis and treatment, psychosocial support while not forgetting sexual reproductive health needs like family planning and drugs for co-morbidities if any. Intricate planning is required to ensure convenient access is maintained while still striving for reduction of unnecessary visits.

The implementation process depends on consent by the patient after information sharing, patient education and deliberations on what works best for the patient. In addition, modifications are allowed as each health facility can determine the precise process for facility-based fast track ART refills that works best for their staffing levels, patient load, and infrastructure.

Retention is care is important in treatment outcomes and is linked to sustained viral suppression (Timothy N.C., *et al*, 2016). Default from treatment increases the risk of transmission of HIV, ill health and death (Agbaor AN., *et al, 2021*). Costs of transport, logistics of accessing care and treatment and time required for treatment have been identified as causes of loss to follow up among HIV positive patients on treatment (Candace M M., *et al, 2010*) These determinants of treatment default are significant because the conventional model of HIV care had frequent clinic visits and long patient waiting time being of concern to patients (IAS, 2016)

Kenya adopted differentiated Service delivery and released guidelines on the same in 2016. The model proposed for stable patients in Kenya is bi-annual clinical reviews for a standard package of care, three monthly ART refills fast tracked at the health care facility facilitated by a nurse, pharmacist or lay counselor (NASCOP, 2017)

1.2 Problem Statement

Patient satisfaction may be defined as an evaluation based on the fulfillment of expectation. Because it is subjective, there lacks a standard way to measure and quantify it. Many factors influence fulfillment on the part of the patient but it is important because it is linked to adherence and treatment outcomes (Samuel O., 2019).

While some studies have found no significant correlation between patient satisfaction and socio-demographic characteristics, others have shown that this correlation exists. The majority of studies have shown that older patients report higher satisfaction as opposed to younger patients in some settings. (Batbaatar *et al.*, 2017) A study in Cameroon measuring client satisfaction with HIV services was able to break it down further and found that overall satisfaction was higher among those aged 31-40 and those above 51 years. Correlation between gender and satisfaction has been varied. In the Cameroon study, being female and employed showed higher satisfaction but when gender was not considered, being unemployed led to higher satisfaction possibly because they were under no pressure to report to a place or deliver on some work. Results have shown a contradiction in education level and marital status (Batbaatar *et al.*, 2017). However, these studies have been done in other health care settings other than HIV and most certainly not in differentiated service delivery. These characteristics are important because the prevalence of HIV among women in Kenya is higher than that of men. More so, the differentiated service model primarily targets those aged 20 years and above; ages that are presumably engaged in income generation who stand to benefit from less frequent hospital visits.

How well information is explained to a patient and questioned are clarified is a determinant of how knowledgeable the patient is concerning their disease. Patient literacy makes for better understanding of the patient for purposes of self-care especially in a fast changing environment

owing to on-going research. This support for self-management has been shown to have a positive influence on interaction with providers. Because interaction with the health system is limited in the DSD, it is important to determine how well the patients understand their treatment goals and role in self-care

Accessibility, availability and affordability are determinants of access. Accessibility is concerned with organization of the health system to aid in utilization of the service resources (availability) with minimal consumer barriers of cost (affordability)

Convenient location, short waiting time and easy of getting appointments have been associated with satisfaction. This is of importance in differentiated service delivery because decentralization of ART delivery at community level and fast tracked ART refill specifically address access, and by extension reduce cost by spending less on transport and not being disengaged from their source of livelihood if employed. Because the model allows for the patient to come back to the health facility before their schedule return date in case of illness or any concern, it would be important to determine the ease of making such an appointment should it be required.

While one of the building blocks of differentiated service delivery is reducing the frequency of clinic visit, it is interesting to note that studies have found that high frequency of clinic visits led to patient satisfaction. This is possibly because of psychological aspect of reassurance from qualified personnel. It would not be surprising to find patients enrolled in differentiated services who have not appreciated having spaced interaction with the health system.

There is without a doubt a positive correlation between patient satisfaction and availability of resources for differentiated service delivery. Available resources determines if the continuum of services has been optimized enough to allow the patient receive all the required services on the

day of the appointment and not have to return and spend more on transport especially if the service is not offered near them.

Communication is closely associated with patient knowledge through information sharing to the patient and allowing for interaction. Adequate information on illness, treatment and tests has been strongly associated with patient. Respect for patient preferences in treatment options, timing of treatment and overall patient involvement in their medical decision has been shown to improve satisfaction (Batbaatar *et al.*, 2017); moreover, a strong correlation has been shown to exist between good provider- patient interaction and patient knowledge of their condition and treatment options (Carlin *et al.*, 2012) because of the joint effort in developing treatment objectives and this remains an important component in DSD.

Healthcare workers, especially doctors and nurses, come under high scrutiny on their affective behavior that has even proven to be of more importance to patients than competence. Being polite, kind(de Waard *et al.*, 2018) courteous, sympathetic, friendly and concerned were highly associated with satisfaction while the perception that one has received incorrect treatment lowered satisfaction (de Waard *et al.*, 2018). While long waiting time decreases satisfaction, there exists a positive association between longer times spent in consultation with a clinician during a patient visit and satisfaction (Batbaatar *et al.*, 2017). The waiting time between appointments is of concern because with the limited interaction of having just two clinical review appointments in a year, the patient requires time inhibited comprehensive evaluation and a friendly atmosphere to encourage openness

In HIV settings, and more specifically differentiated services, evidence shows reduction in patient waiting time and provision of quality care by health care workers because of decongestion of health

care facilities but these have focused mainly on the benefits to the health system. Studies have however not considered patients' perceptions, or experience and satisfaction with the model despite the model being patient centered and the significance of patient satisfaction for program success.

1.3 Conceptual Framework

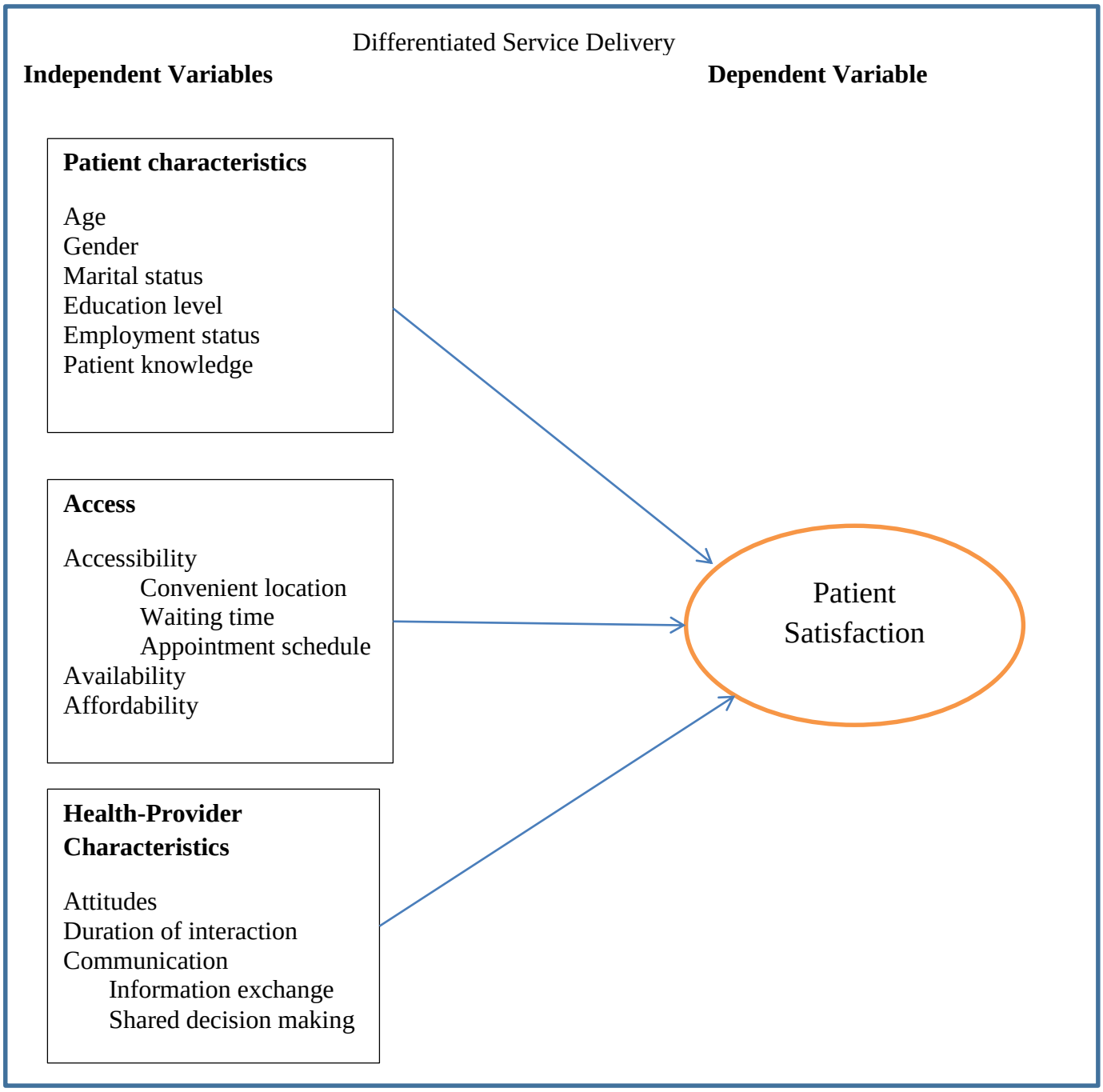


Figure 1. Conceptual framework

This is a diagrammatic representation of the independent variables and the dependent variable being measured, in this case, patient satisfaction. The first box expounds on the demographics that

were collected for patient's characteristics being age, gender, marital status, education level attained, marital status and the level of HIV knowledge. For access, the areas of interest are accessibility in terms of convenience of location, waiting time and convenience of appointment schedule as well as availability and affordability of services. Some of the health provider characteristics of interest singled out are; attitudes, duration of interaction and quality of communication to facilitate information exchange and shared decision making.

1.4 Research Question/s

1. What is the relationship between patient characteristics and satisfaction in differentiated service delivery?
2. What is the effect of access on satisfaction of stable patients in differentiated service delivery?
3. How do health provider characteristics influence satisfaction of stable patients in differentiated service delivery?
4. What is the level of satisfaction of stable patients in differentiated service delivery?

1.5 Study Objectives

1.5.1 General objective

The general objective of the study was to assess determinants of patient satisfaction among stable patients enrolled in differentiated service delivery in Kiambu County.

1.5.2 Specific Objective

1. To determine the effect of patient characteristics on satisfaction among stable patients in differentiated service delivery
2. To determine the effects of access on patient satisfaction among stable patients in differentiated service delivery
3. To determine the effect of health provider characteristics on patient satisfaction among stable patients in differentiated service delivery
4. To determine the extent to which stable patients in differentiated service delivery are satisfied with the services

1.6 Study Variables

1.6.1Independent variables

The independent variables of the study were patient characteristics, access and healthcare worker Indicators for access were as follows;

i) Age at last birthday

ii) Gender

iii) Marital status, education level attained, marital status and the level of HIV knowledge and DSD knowledge.

Indicators for access were;

i) Time taken to reach the facility

ii) Amount of time

iii) availability of services

iv) affordability of services.

Indicators health provider characteristics of interest were as follows

i) Attitude of health care workers

ii) Duration of interaction between healthcare worker and client

iii) Shared decision making.

1.6.2 Dependent Variable

The dependent variable being measured, in line with the operational definition was patient satisfaction. It is the degree to which the HIV differentiated services are perceived by the patient to have met or exceeded their expectation.

1.7 Hypotheses

The study was guided by the following Null Hypotheses:

H_0 Patients knowledge of DSD among stable patients has no effect on patient satisfaction

H_0 Waiting time for stable patients on DSD has no effect on patient satisfaction

H_0 Duration of interaction for stable patients on DSD has no effect on patient satisfaction

1.8 Justification

Kiambu had a population of 2.41 million according to the report on 2019 Kenya Population and Housing Census (KNBS, 2019). It was ranked 17th highest in HIV incidence in the country of between 1.31 and 2.60 per 1000. It ranked 6th among counties with highest HIV burden for individuals aged above 15 years and 8th highest contributor to pediatric HIV burden. (NACC, 2018) Although the statistics for Kiambu County are lower than the national average, they still higher than the SDG target despite having many facilities offering HIV services within the county.

Patient satisfaction has been linked to important outcomes like superior compliance inferring less loss to follow up better treatment outcomes, efficient utilization of medical resources and better prognosis (Huang JA., *et al*, 2004). The findings from this study would inform better implementation of DSD in Kiambu to drive success of the program especially since there were no known studies that has documented satisfaction of HIV differentiated services in Kenya.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews documented evidence on patient satisfaction. Literature was searched on HINARI, CINAHL, PLOS, Biomed using key search terms like “Differentiated care” “Differentiated care and HIV” “Differentiated care models” “HIV care and satisfaction” “Determinants of patient satisfaction” “Multi-month drug dispensing” “spaced appointment and HIV”. Scientific material with the search words were included to the literature review while conference abstracts were not included because they lack sufficient information. The literature review has been summarized into; overview of patient satisfaction, patient characteristics and satisfaction, access to health care services, healthcare worker characteristics and gaps identified.

2.2 Overview of patient satisfaction

Assessing the degree to which patients’ experiences match their expectation of quality or level of health care services remains relevant. This is because it is a reflection of how well the system is meeting the need for the patient and has an effect on patient retention and patient outcomes; especially for a disease like HIV that requires strict adherence, close clinical monitoring and integration of other services to optimize their outcomes. Several studies have been done to determine obstacles and enablers of satisfaction of services received. Without a doubt, there is no one determinant of satisfaction, rather an intricate web of factors.

2.3 Patient characteristics and satisfaction

In a qualitative study to examine overall patient satisfaction in relation to concepts of health care system interaction and patient characteristics, (Carlin *et al.*, 2012) used national survey data of individuals’ number and type of chronic illness. The researchers operated on the basic assumption

that overall satisfaction is equated to the variance between anticipated and actual service received. While numerous studies may focus on measuring satisfaction pegged on a single patient visit and before and after surveys, the authors take an alternative approach and assume that expected care experience is a function of consumer socio-demographic characteristics and complexity of disease(Carlin *et al.*, 2012). They hypothesize that satisfaction with care is dependent upon three concepts; quality of provider interaction, perception of provider support for self-care and the patients understanding of own medical condition. Their findings reflect higher levels of overall patient satisfaction for those with more reported chronic illnesses.

In an effort to identify challenges experienced by chronically ill patients and get proposals of possible suggestions to improve service delivery, (Mirzaei *et al.*, 2013) conducted a qualitative study using in-depth interviews and focused group discussions. The study targeted patients suffering complicated diabetes, chronic heart failure or chronic obstructive pulmonary disease, their care givers and health care professionals who provide care to patients with the mentioned conditions. Among the concerns raised were communication and information delivery by HCW, waiting time, organization of health services and level of inclusion of patients and care givers in decision making, among others.

In a study aimed at identifying the determinants of satisfaction brought out a different angle of the place of social vulnerability and its influence on patient satisfaction. It was a cross-sectional analysis of data drawn from the 9th year of a cohort follow-up of HIV-1 positive patients who were started on a certain regimen of drugs (Préau *et al.*, 2012). It found that satisfaction is more a reflection of a patient's psychological state rather than a pointer of quality of service they are receiving. The results from their study showed that comfortable housing conditions, strong support

from either family or friends were important links to complete satisfaction with their physicians or with the organization of services.

2.4 Access to health care services

Patient waiting time which may simply be described as the duration it takes one to access a certain service remains an important aspect of healthcare because it affects utilization of services. As much as patients may be satisfied with the medical care they receive, when the time lapse between entry into the facility and access to the medical care is long, it causes dissatisfaction. This is evident from a study conducted in Nigerian clinic to study satisfaction and collect opinions from people living with HIV/ AIDS (Olowookere *et al.*, 2012). Of 400 patients, 60.2% reported waiting for between 1 to 2 hours while 12.7% reported waiting times of more than 2 hours. 60.7% of the participants in the study described the waiting time as long while 10.7% described the waiting time as being too long. This had an effect on overall satisfaction with 10.4% being dissatisfied and 4.7% being very dissatisfied. Patients also expressed displeasure at how long it took to see the health care provider and make an appointment, which also tended to be inflexible(Mirzaei *et al.*, 2013).

In a different study done by (Mehra, 2015) evaluated effect of provider communication skills and styles (dominant or friendly) on the overall satisfaction of patients if waiting time was introduced as a moderator variable. They found that separately, communication skills and waiting time had an effect on overall patient satisfaction but when waiting time was introduced as a moderator, it had no effect when the communication style used was dominant or friendly. The study also showed disparities between patient/ provider gender, age and education levels and satisfaction with waiting time. Patients waiting time was significantly longer for those seeing male providers as opposed to female providers and older less educated patients were more dissatisfied with longer waiting times than their younger more literate counterparts in the study.

Long periods of waiting time can be frustrating to the patients. Among patients receiving care and treatment for HIV and TB in a rural sub-district of Kwa-Natal in South Africa, long waiting time contributed to their dissatisfaction(Chimbindi N et al, 2014). Long waiting time was contributed to by unfavorable patient flow necessitating them to make two ques (one after another). Their dissatisfaction was so much that they offered food rations at the clinic as they waited was proposed as a suggestion to ease the frustration(Chimbindi N et al, 2014).

Our attention is drawn to a different measure of waiting time that measures the difference between when an appointment is made or desired and when the patient actually gets attended to. That it is not just a measure of the duration it takes a client to receive a service or be attended to from the waiting bay. (Prentice, Davies and Pizer, 2014). The ease or difficulty with which these appointments are made and completed act as a measure of access contribute to satisfaction or dissatisfaction. The results from the study showed that 80% of the respondents reported obtaining appointments as soon as they wanted them and the same proportion reported satisfaction. This wait time measure and the ease of making an appointment becomes significant in differentiated service delivery because with long durations away from the clinic, patients who fall ill between appointments would ordinarily want to be seen as soon as possible as that is one of the assurances given to the patients.

Location of the services as a factor of access can also not be overlooked. In the study conducted among patients receiving care and treatment for HIV and TB in a rural sub-district of Kwa-Natal in South Africa by Chimbindi, patients requested support for transport to and from the facility because they had long distances to travel(Chimbindi N et al, 2014)

2.5 Health provider characteristics and care provision

Inflexible and unaccommodating HCWs, poor communication, inadequate explanation of illness, treatment and side effects and communication given in a lecture format as some barriers to utilization of services and they greatly affect patient satisfaction and they are the finding Mirzaei identified in his study(Mirzaei *et al.*, 2013). The perception that HCW are dismissive hindered patients and their care givers from actively being involved in decisions concerning their care. The authors further identified possible suggestions and solutions to the barriers that could facilitate better access and utilization to support their stand. Merely addressing what is best for the patient is not enough but rather, going deeper to identify and address what they want, need and prefer is a far better approach. Conversely, in Chimbindi's study that sought factors affecting satisfaction though structured exit interviews using both closed and open ended questions, recorded high satisfaction levels with staff attitudes and respectful treatment at 93% among HIV patients and 96% among TB patients.

Patient satisfaction does not always follow a pre-set pattern, in some areas patient satisfaction remains high despite health care workers being disrespectful and patient waiting times being long.

2.6 Gaps Identified

There is inadequate data on patient satisfaction with DSD. Although DSD services have been rolled out and implementation is on-going, there is not enough literature that appraises the patients' satisfaction with the model. This study therefore aimed to explore patients' satisfaction within the model

CHAPTER 3: METHODOLOGY

3.1 Study design

The study was a cross-sectional survey that applied mixed methods concurrent triangulation approach. Qualitatively, data were collected using a structured researcher administered questionnaire and quantitative data was collected using an FGD guide.

Qualitative data was collected concurrently and on completion, prevailing themes generated manually. Triangulation was then done to identify prevailing themes in qualitative and significant values in quantitative data.

This study design (Fig. 2) was used in order to attain depth and understanding of the issues for corroboration.

Figure 2: Research design: adapted and modified from (W.Creswell, 2000)

3.2 Study Area

Kiambu County, one of the 47 counties in Kenya, covers an area of 2,543.5 km^2 with 12 sub-

counties. It borders Nakuru, Kajiado, Muranga, Nyandarua and Nairobi Counties. Kiambu had a population of 2.41 million according to the report on 2019 Kenya Population and Housing Census (KNBS, 2019)It had an estimated 70,000 PLHIV in 2016 and the estimates as per 2018 HIV estimates report were about 59,000 and is ranked 17th highest contributor nationally to the total number of people living with HIV with a prevalence of 4% in 2017 down from 5.6% in 2015. An estimated 1,500 patients had been enrolled in differentiated Service delivery across 6 facilities.(NACC, 2016)

Although the statistics for Kiambu County are lower than the national average, they still higher than the SDG target despite having many facilities offering HIV services within the county.

3.3 Study population

The study population was active HIV positive patients aged 20 years and older receiving treatment and enrolled in differentiated service delivery in the following health care facilities: Kiambu County Referral Hospital, Karuri Sub-County Hospital, Wangige Sub-County Hospital, Kigumo Sub-County hospital, Ngewa Health Center and Gichuru Health Center

3.4 Inclusion criteria

The study included HIV positive male or female patients 20 years and above, who had been on treatment for more than one year and enrolled in differentiated service delivery.

3.5 Exclusion criteria

Respondents who met the inclusion criteria but got diagnosed with an opportunistic infection, or had a detectable viral load or were critically ill during the visit were excluded from the study.

3.6 Sample size

Large-scale population studies have not been done in differentiated service delivery to help in sample quantification. Sample size was derived by computing the minimum sample size required for accuracy in estimating population with specified relative precision (S. K. Lwanga, 1991) by considering the standard normal deviation set at 95% confidence level (1.96), percentage picking a choice or response (50% = 0.5) and the confidence interval (0.05 = ±5). The formula used was: n = z*z (p)(1-p) *c*c Where: z = standard normal deviation set at 95% confidence level p = percentage picking a choice or response c = confidence interval

Necessary Sample Size = $(\text{Z-score})^2$ * Std Dev*(1-StdDev) / $(\text{margin of error})^2$

$((1.96)^2 \times .5(.5)) / (.05)^2$

$(3.8416 \times .25) / .0025$

$.9604 / .0025$

384.16

385 respondents were needed

3.7 Sample selection

Multi-stage sampling was done for the quantitative section of the study. The first stage was to determine the number of facilities that will participate in the study. Purposive sampling was done; at the time of the study, only 7 facilities had fully implemented differentiated services for HIV patients. All the 7 facilities were selected to participate as follows; 6 study sites and one facility was used to pre-test the study questionnaire

Proportionate sampling was then used to determine the number of participants per facility as in table 1.

Table 1. Sampling

Facility	No. Of patients enrolled on DSD	Sample size determination per facility	Sample size per Facility
Kiambu C.R.H	1000	$\frac{1000*385}{1465}$	263
Karuri Sub-county Hospital	300	$\frac{300*385}{1465}$	79
Ngewa Sub- County Hospital	50	$\frac{50*385}{1465}$	13
Kigumo Sub-County Hospital	50	$\frac{50*385}{1465}$	13
Gichuru Health Center	50	$\frac{50*385}{1465}$	13
Ngewa Health Center	15	$\frac{15*385}{1465}$	4
TOTAL			**385**

Finally, at facility level, systematic sampling was done; the first stable patient was selected randomly and thereafter, every 3rd stable patient enrolled for differentiated services attending clinic was approached for participation in the study.

For the qualitative section of the study, focused group discussions were conducted. Systematic sampling was also used to identify participants. The 1st patient was selected randomly and the 5th patient thereafter was invited to sit in a focused group discussion. Should they have declined; the next patient was requested to participate. The focused group discussions had 7 to 10 participants. A total of 9 focused group discussions were conducted.

3.8 Data collection tools and techniques

The tool used for data collection for the quantitative section was a modified version of the Customer Satisfaction Survey included in the Differentiated Care Operational Guide

manual(NASCOP, 2017). The questionnaire was researcher assistant administered and contained a Likert scale for majority of the 32 questions. Each questionnaire took approximately 20 minutes to be administered from consent process to completion (Ref. Appendices 7.3, 7.4, 7.5)

A Focused Group discussion guide which consisted of 10 questions was developed for qualitative data collection. It captured the desired thematic areas and contained the goals, required settings and the open ended questions for the discussions. The sessions had a moderator and a note taker who had an audio recorder.

Research assistants recruited to assist in data collection were either diploma holders in a health related field or had worked in a health related program with experience in data collection; conducting focused group discussions and research assistant administered questionnaires. They were trained on the purpose of the study and ethical considerations for conducting research. They were also trained on the data collection tool, how to conduct questionnaire interviews (interviewer administered questionnaire) and focused group discussions.

3.9 Validity

During selection of the study participants for qualitative and quantitative sections of the study, randomization was done to reduce bias. Validity of the data was also optimized through pre- testing the study questionnaire, training of the research assistants and researcher assisted questionnaire to make sure that the right data was collected to the extent possible.

3.10 Ethical considerations

Research ethical considerations were to safeguard patients against the risk of unintended exposure of their responses and possible fear of victimization by health care workers. Confidentiality and anonymity was maintained at all times during the process of data collection. For both quantitative

and qualitative data collection, there were no patient identifiers and the sessions were conducted in a room for privacy where only the study participant and the research assistant were.

Ethical approval was sought from: University of Nairobi and KNH ethical review committee (Appendix 7.7). Approval to conduct research was also sought from Kiambu County research board (Appendix 7.8) and National Commission for Science Technology and Innovation (NACOSTI) (Appendix 7.9). Communication was done to the facility management teams of the participating health care facilities and the county approval shared as well. Informed consent was sought from the research participants before commencing the data collection.

3.11 Data Quality Assurance

Research assistants were trained prior to data collection. A pre-test was conducted in a selected facility not part of the study and revisions were done to the questionnaire to ensure the tool collected the information intended to answer the research question. On a daily basis, before data was keyed in, questionnaires were checked for completeness and consistency.

3.12 Data collection

Data collection took place from October 2019 to November 2019. Prior communication about the study had been made to county and Sub-County HIV coordinators and medical superintendents, nursing service managers and Comprehensive Care Center In-Charges for the various facilities involved in the study. Research assistants reported to the facility in-charges and CCC in-charges to make their presence known before commencing on data collection. Prior arrangements were done to allocate a private room for interviews and FGD’s at the appropriate time.

For the questionnaire, the research assistants approached the patient, introduced and identified themselves and asked permission to explain the purpose of their interaction. This was followed by explaining to the patients their right to decline without victimization and consequences and should the patient accept, they were ushered to a private room for the questionnaire to be administered. The research assistant filled the responses given by the patient on the questionnaire.

Patients consenting to the focused group discussions were ushered into a private room. The sessions had a moderator and a note taker who had an audio recorder. Introductions were done by the research team and the patients were assigned numbers. Explanation for lack of patient identifiers and need to record was done and- consent sought again. For those consenting, the discussion was guided by research assistants based on the guide. Written responses were documented in a note book.

At the end of each interaction, each study participant signed a sign-up sheet and daily, at the end of the exercise, the CCC in-charge signed and stamped a facility sign-up sheet as proof that the research assistants were present and carried out the required activities.

3.13 Study flow

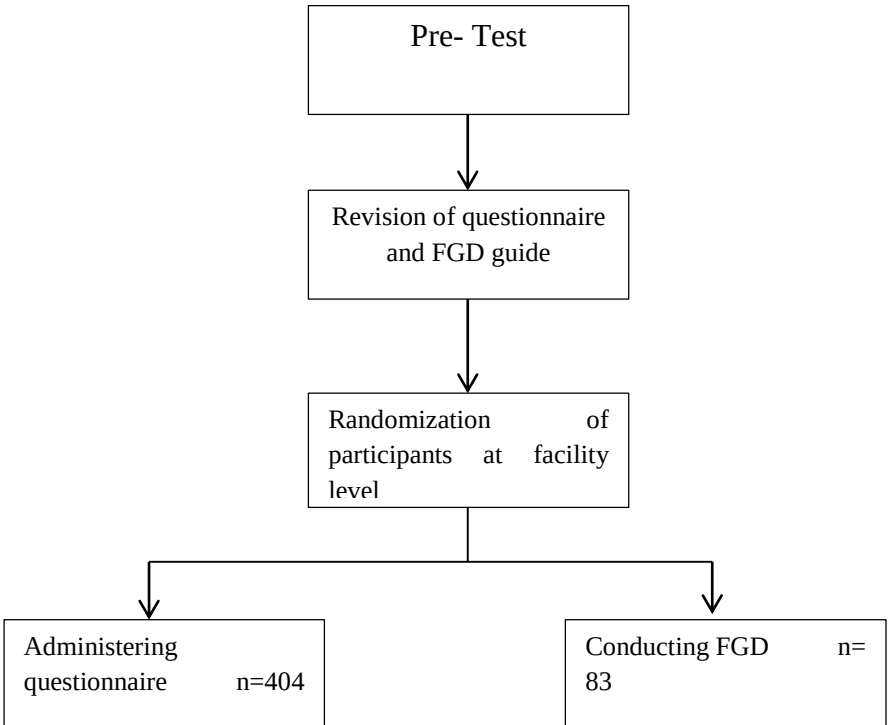


Figure 3: Study flow

3.14 Data Analysis

Analysis for quantitative data was two pronged; exploratory analysis to get preliminary patterns followed by inferential statistics to analyze relationship between variables of interest.

For qualitative analysis, prevailing themes were generated manually. Audio recordings collected during the focused group discussions were transcribed and compared with the notes taken during the sessions. Based on the themes of the study from the discussion guides, codes were established and each groups responses were batched using the coding key as the prevailing themes. When no more themes were identified, it was finalized.

3.14.1 Quantitative data

Once data had been collected, analysis was done in two steps using SPSS

Step One: Simple descriptive statistics. This was summary of patient characteristics and captured age, gender, marital status, employment status and scores form questions testing knowledge of HIV and Differentiated Services

Step two: Inferential statistics

Test of association: Chi-square was used to test association of each ordinal variable (in this case, each question was treated as a variable) against overall patient satisfaction in differentiated service

delivery. Continuous data of age, time taken to reach the facility and time spent at the facility were not considered because chi-square test is designed to analyze categorical data.

Ordinal Regression: This was to be done after tests of association in line with the overall objective of the study to determine significant predictors of satisfaction among patients enrolled in differentiated service delivery.

However, the variables did not conform to a normal distribution and only 1% of respondents registered dissatisfaction, the assumptions of multivariate normality(Healy, 2017) and the minimum required events per variable (Austin and Steyerberg, 2017) necessary for regression analysis were violated and as such, ordinal regression could not be implemented.

Overall patient satisfaction, being the dependent variable, was collected as ordinal data; ordered 0-4 ranging from very dissatisfied to very satisfied.

3.14.2. Qualitative data

Audio recordings collected during the focused group discussions were transcribed and compared with the notes taken during the sessions. Based on the themes of the study from the discussion guides, codes were established and each groups responses were batched using the coding key as the prevailing themes. When no more themes were identified, it was finalized.

Finally, to incorporate findings from the qualitative arm of the study, the prevailing themes were compared and triangulation was then done to the significant values from the quantitative data analyzed.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter describes findings obtained after analysis of data collected through interviewer assisted questionnaires and focused group discussions. It captures the following sections: characteristics of study participants, relationship between patient characteristics and satisfaction, relationship between access and patient satisfaction, relationship between healthcare worker characteristics and patient satisfaction, overall patient satisfaction, directional and symmetric tests, qualitative analysis and prevailing themes.

4.2 characteristics of study participants

Variables	n=404	%
Gender		
Male	92	23
Female	312	77
Other	0	
Age		
20-29yrs	19	4.
30-39yrs	115	28.5
40-49yrs	168	41.6
50-59yrs	78	19.3
≥ 60 yrs	24	5.9
Marital Status		
Single	122	30
Married	163	40
Separated	59	15
Widowed	60	15
Edu. Level		
None	13	3
Primary	204	51
Secondary	150	37
College/Uni.	37	9
Employed		
Yes	289	71.5
No	115	28.5
HIV Knowledge		
Knowledgeable	190	47
Very knowledgeable	212	52
DSD Knowledge		
Not Knowledgeable	12	3
Uncertain	11	2
Knowledgeable	207	52
Very Knowledgeable	172	43

Table 2: characteristics of study participants (categorical data)

Table 2 shows the socio-demographic distribution of the study participants. Majority (77%) of the study participants were female. Almost half (41.6%) were aged between 30-39 years with a mean age of 43.7%. Two-fifths were married, and 51% of the participants had attained primary level of education.

Seventy-one percent of the study participants were employed. Most of the participants reported knowledge of DSD with 52% being knowledgeable and 43% very knowledgeable.

		Time it takes to get to the facility	Time spent at the facility	Age at last birthday
N	Valid	404	404	404
	Missing	0	0	0
Mean		57.425	54.06	43.77
Std. Deviation		42.4282	50.715	9.309
Minimum		1.5	3	21
Maximum		300.0	300	78

Table 3: Characteristics of study participants (continuous data)

The mean age for participants in this study was 43.77. It took an average of 57 minutes to reach the facility and participants spent an average of 54 minutes while at the facilities as seen in table 3.

4.3 Relationship between patient characteristics and satisfaction

		Extent of Satisfaction with Differentiated services				Total	P Value
		Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied		
Age Bands	20-29	0	0	7 (3.8%)	12 (5.5%)	19 (4.7%)	0.853
	30-39	2 (67%)	1 (100%)	50 (27.3%)	62 (28.6%)	115 (28.5%)	
	40-49	0	0	80 (43.7%)	88 (40.6%)	168 (41.6%)	
	50-59	1 (33%)	0	36 (19.7%)	41 (18.9%)	78 (19.3%)	
	>60	0	0	10 (5.5%)	14 (6.5%)	24 (5.9%)	
Total		3	1	183	217	404	
Gender	Male	1(33%)	0(0.0%)	47(26%)	44 (20%)	92 (23%)	0.545

	Female	2(67%)	1(100%)	136(74%)	173(80%)	312(77%)	
Total		**3 (100%)**	**1 (100%)**	**183**	**217**	**404**	
Marital Status	Single	1(33%)	0 (0.0%)	44(24%)	77 (36%)	122 (30%)	0.028
	Married/cohabiting	0 (0%)	1 (100%)	76 (42%)	86 (40%)	163 (40%)	
	Separated/Divorced	2 (67%)	0	35 (19%)	22 (10%)	59 (15%)	
	Widowed	0	0	28 (15%)	32 (15%)	60 (15%)	
Total		**3**	**1**	**183**	**217**	**404**	
Highest Education Level	None	0	0	7 (3.8%)	6 (2.8%)	13 (3.2%)	0.3
	Primary	1 (33%)	1 (100%)	100 (54.6%)	102 (47%)	204 (50.5%)	
	Secondary	2 (67%)	0	67 (36.6%)	81 (37.3%)	150 (37%)	
	College/University	0	0	9 (4.9%)	28 (12.9%)	37 (9.2%)	
Total		**3**	**1**	**183**	**217**	**404**	
Employed or self-employed	Yes	3 (100%)	1 (100%)	118 (64.5%)	167 (77%)	289 (71.5%)	0.027
	No	0	0	65 (35.5%)	50 (23%)	115 (28.5%)	
Total		**3**	**1**	**183**	**217**	**404**	
Extent to which one would say they have been taught and know about their condition of HIV and treatment they are on	Knowledgeable	0	0	151 (83%)	39 (18.1%)	190 (37.3%)	0.00
	Very knowledgeable	3 (100%)	1 (100%)	31 (17%)	177 (81.9%)	212 (52.7%)	
Total		**3**	**1**	**182**	**216**	**402**	
Extent to which one would say they have been taught and know about differentiated care	Not knowledgeable	0	0	11 (6%)	1 (0.5%)	12	0.00
	Uncertain	0	0	9 (4.9%)	2 (0.9%)	11 (2.7%)	
	Knowledgeable	0	0	154 (84.6%)	53 (24.5%)	207 (51.5%)	
	Very knowledgeable	3 (100%)	1 (100%)	8 (4.4%)	160 (74.1%)	172 (42.8%)	
Total		**3**	**1**	**182**	**216**	**402**	

Table 4: Relationship between patient characteristics and satisfaction

Table 4 shows that 40.6% of the study participants who said they were very satisfied with the differentiated services were aged between 40-49 years and 80% were female. The married/cohabiting study participants (40%) indicted they were very satisfied. Forty-seven percent (47%) reporting being very satisfied had primary level education, while 77% of the participants who were employed or self-employed reported being very satisfied with the differentiated services.

Those who reported most satisfaction with DSD were also the ones who had more awareness about their HIV condition and treatment (81.9%) and considered themselves as being very knowledgeable about DSD (74.1%)

Responses to questions testing knowledge of HIV and DSD		
Would there still be need for one to use condoms when having sexual intimacy with a HIV positive partner and both of you are on ARV's?	Yes	384 (95%)
	No	19 (5%)
	N	403
How does HIV treatment work in the body	Destroys all the HIV in the body	5 (1%)
	Reduces the amount of HIV in the body and boosts the immune system	396 (98%)
	Makes the nervous system more effective	2 (1%)
	N	403
What does having an 'Undetectable viral load' mean?	Other people can't tell you have HIV	3 (1%)
	The level of the virus in the blood is so low it can't be detected and passing it to others is hard	400 (99%)
	N	403
On a refill appointment, would there be need to see the clinician if you are not unwell?	Yes	363 (91%)
	No	38 (9%)
	N	401
What is the frequency of clinic visits in DSD as compared to the previous appointment system for those considered 'stable'?	Less frequent	390 (96%)
	Just the same	7 (2%)
	More frequent	7 (2%)
	N	404

Table 5. Responses to questions testing knowledge of HIV and DSD

Majority of participants expressed knowledge in the rationale of condom use despite concordant positive status with sexual partner (95%), the mechanism of drug action (98%) and viral suppression (99%). Where differentiated services are concerned, only 9% indicated there would be no need to see a clinician on a re-fill appointment as is the desired practice and 96% indicated that clinic visit in DSD were less frequent as seen in table 5.

4.4 Relationship between access and patient satisfaction

		Extent of satisfaction with differentiated services				Total	P Value
		Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied		
Description of distance between residence and health facility	Very far	0	0	10 (5.5%)	18 (8.3%)	28 (7%)	0.00
	Far	0	0	34 (18.8%)	46 (21.3%)	80 (20.1%)	
	Uncertain	0	0	38 (21%)	3 (1.4%)	41 (10.3%)	
	Near	1 (100%)	1 (100%)	89 (49.2%)	97 (44.9%)	188 (47.1%)	
	Very near	0	0	10 (5.5%)	52 (24.1%)	62 (15.5%)	
Total		1	1	181	216	399	
Reason for choice of facility despite far distance	Only facility around			4 (9.1%)	12 (30.8%)	16 (19.3%)	0.62
	Only one offering HIV services near			13 (29.5%)	7 (17.9%)	20 24.1%)	
	Better services			21 (47.7%)	18 (46.2%)	39 (47%)	
	Fear of /Stigma			3 (6.8%)	0	3 (3.6%)	
	Friendly HCW			3 (6.8%)	2 (5.1%)	5 (6%)	
Total				44	39	83	
Description of waiting time	Too long	0	0	5 (2.7)	4 (1.9)	9 (2.2%)	0.00
	Long	0	1 (100%)	18 (9.8%)	26 (12.1%)	45 (11.2%)	
	Uncertain	0	0	7 (3.8%)	3 (1.4%)	10 (2.5%)	
	Short	3 (100%)	0	149 (81.4%)	82 (38.1%)	234 (58.2%)	
	Very Short	0	0	4 (2.2%)	100 (46.5%)	104 (25.9%)	
Total		3	1	183	215	402	
Queuing to see all carders of health care providers on refill days (other than drug collection)	Yes	2 (66.7)	1 (100%)	87 (47.8%)	127 (58.8%)	217 (54%)	0.119
	No	1 (33.3%)	0	95 (52.2%)	89 (41.2%)	185 (46%)	
Total		3	1	182	216	402	
Satisfaction with waiting time	Very Dissatisfied	0	0	3 (1.6%)	2 (0.9%)	5 (1.2%)	0.00
	Dissatisfied	0	1 (100%)	17 (9.3%)	11 (5.1%)	29 (7.2%)	
	Uncertain	0	0	8 (4.4%)	0	8 (2%)	
	Satisfied	1 (30%)	0	151 (82.5%)	72 (33.2%)	224 (55.4%)	
	Very Satisfied	2 (67%)	0	4 (2.2%)	132 (60.8%)	138 (34.2%)	
Total		3	1	183	217	404	
Receipt of all needed services during a clinical visit	Yes	3 (100%)	1 (100%)	176 (96.2%)	206 (96%)	386 (96%)	0.984
	No	0	0	7 (4%)	8 (4%)	15 (4%)	
Total		3	1	183	214	401	
	Very Little	0	0	3 (1%)	1 (0.5%)	4 (1%)	0.00

Extent to which spaced appointments of differentiated services saved time?	Little	0	0	8 (4%)	1 (0.5%)	9 (2.2%)	
	Uncertain	0	0	4 (2%)	1 (0.5%)	5 (1.2%)	
	Much	0	1 (100%)	117 (63%)	32 (14.8%)	150 (37.2%)	
	Very Much	3 (100%)	0	51 (30%)	181 (84%)	235 (58.3%)	
Total		3	1	183	216	403	
Extent to which spaced appointments of differentiated services saved cost	Very Little	0	0	2 (1%)	0	2 (1%)	0.00
	Little	0	0	11 (6%)	1 (0.5%)	12 (3%)	
	Uncertain	0	0	4 (2%)	1 (0.5%)	5 (1%)	
	Much	0	0	108 (59%)	31 (14%)	139 (34%)	
	Very Much	3 (100%)	1 (100%)	58 (32%)	183 (85%)	245 (61%)	
Total		3	1	183	216	403	

Table 6: relationship between access and patient satisfaction

Participants whose distance between residence and health facility was near (44.9%) indicated that they were very satisfied with differentiated services, those who were very satisfied (46.2%) despite far distance indicated their reason was because of better services at the facility, while (46.5%) were very satisfied because of very short waiting time. Over half (58.8%) of the participants reported queuing to see all cadres of health care providers on refill days (other than drug collection), (60.8%) indicted they were very satisfied with waiting time, (96%) indicated receipt of all needed services during a clinical visit. Participants reporting very high satisfaction indicated that the spaced appointments had saved them time were 84% while those who indicated that the spaced appointments had saved them cost were (85%) as seen in table 6.

4.5 Relationship between health care worker characteristics and patient satisfaction

		Extent of satisfaction with differentiated services				Total	P Value
		Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied		
Did participants feel comfortable interacting with HCW	Yes	3 (100%)	1 (100%)	182 (99.5%)	214 (99.5%)	400 (99.5%)	0.998
	No	0	0	1 (0.5%)	1 (0.5%)	2 (0.5%)	
Total		3	1	183	215	402	
Extent to which HCW were respectful during interactions	Disrespectful	0	0	1 (0.5%)	0	1 (0.2%)	0.00
	Uncertain	0	0	1 (0.5%)	0	1 (0.2%)	
	Respectful	0	0	140 (76.5%)	24 (11.1%)	164 (40.6%)	
	Very Respectful	3 (100%)	1 (100%)	41 (22.4%)	193 (88.9%)	238 (58.9%)	
Total		3	1	183	217	404	
If patients felt the HCW listened to and understood them	Yes	3 (100%)	1 (100%)	182 (99.5%)	217 (100%)	403 (99.8%)	0.75
	No	0	0	1 (0.5%)	0	1 (0.2%)	
Total		3	1	183	217	404	
If patients felt HCW were competent to treat them	Yes	3 (100%)	1 (100%)	182 (99.5%)	217 (100%)	403 (99.8%)	0.75
	No	0	0	1 (0.5%)	0	1 (0.2%)	
Total		3	1	183	217	404	
Perception that time spent with the HCW is enough	Yes	3	1	182 (99.5%)	217 (100%)	403 (99.8%)	0.75
	No	0	0	1 (0.5%)	0	1 (0.2%)	
Total		3	1	183	217	404	
Perception that HCW create an atmosphere that allows one to ask questions and seek clarifications	Yes	3	1	182 (99.5%)	217 (100%)	403 (99.8%)	0.75
	No	0	0	1 (0.5%)	0	1 (0.2%)	
Total		3	1	183	217	404	
Perception that health goals and decisions are made jointly	Yes	3 (100%)	1 (100%)	183 (100%)	215 (99.1%)	402 (99.5%)	0.63
	No	0	0	0	2 (0.9%)	2 (0.5%)	
Total		3	1	183	217	404	

Table 7: relationship between health care worker characteristics and patient satisfaction

A large proportion of the participants (99.5%) felt comfortable interacting with HCW additionally, 88.9% who indicated that HCW were respectful during interactions were very satisfied with the differential services. All (100%) of the study participants indicating that they felt the HCW listened to and understood them, were competent to treat them and that time spent with the HCW was

enough with an atmosphere that allowed one to ask questions and seek clarifications were very satisfied with the differentiated services. Ninety-nine percent felt very satisfied because of perception that health goals and decisions are made jointly as seen in table 7.

Variables with a *P* value less than 0.05 were considered to have significant correlation with satisfaction. These variables were marital status (*P*= 0.028), employment status (*P*= 0.027), knowledge of HIV management and treatment (*P*=0.00). Knowledge of differentiated services (*P*=0.00), proximity to health facility (*P*=0.00), waiting time (*P*=0.00), extent to which differentiated services saved time (*P*=0.00) and cost (*P*=0.00) and health care worker respect (*P*=0.00) (Table 4, 6, 7)

4.6 Overall patient satisfaction with differentiated services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	3	.7	.7	.7
	Dissatisfied	1	.2	.2	1.0
	Satisfied	183	45.3	45.3	46.3
	Very Satisfied	217	53.7	53.7	100.0
	Total	404	100.0	100.0	

Table 8. Overall patient satisfaction with differentiated care

Overall patient satisfaction with differentiated services was high at 99% with majority reporting being either satisfied (45.3%) or very satisfied (53.7%) as shown in table 8

4.7 Directional and symmetric tests

Variables that showed significant *p* values in relation to patient satisfaction with differentiated services were further subjected to tests to determine the strength of the relationship to satisfaction. Variables that had a Somers'd value 0 to +/- 3 were considered to have a weak relationship, +/- 0.31 to +/- 0.7 a moderate relationship and up to 1 a strong relationship.

Variables that had a phi value of +/- 0.01 to 0.29 weak considered to be weak, +/- 0.3 to 0.39 were moderate, +/- 0.4 to 0.69 were strong and above that were considered to be very strong.

Variable	*P* Value	Phi	Somers D
Marital Status	0.028	0.215	-.112
Employment status	0.027	.151	-.121
Knowledge of HIV	0.000	.651	.610
Knowledge of Differentiated services	0.000	.710	.635
Distance between home and facility	0.000	.396	.139
Waiting time	0.000	.547	.350
Time saving	0.000	.572	.526
Cost saving	0.000	.572	.525
Health Care Worker respect	0.000	.676	.636

Table 9. Results of direction and symmetric tests

From the analysis results in table 7, marital status, employment status and proximity to the health facility did not have a strong association with satisfaction. Knowledge of HIV treatment, knowledge of DSD, waiting time, perception of saving in time and cost and health care worker respect had moderate to strong relationship to satisfaction of differentiated services.

The variables did not conform to a normal distribution and only 1% of respondents registered dissatisfaction as shown in table 8. The assumptions of multivariate normality(Healy, 2017) and the minimum required events per variable (Austin and Steyerberg, 2017) necessary for regression analysis were violated and as such, ordinal regression could not be implemented.

4.8 Qualitative analysis

A total of 83 participants were involved in 9 focused group discussions. The FGD guide was structured to seek deeper insight in the areas of access to services and health care worker characteristics in relation to satisfaction for differentiated care.

Data was collected using a voice recorder and field notes then transcribed and coded. Thematic patterns were identified and summarized and important data filtered. Narrative construction was done and presented using representative quotes from FGD participants

4.8.1 Convenience of proximity to health facility

Majority of respondents reported living close to the facility and having ease in access. They felt that the close proximity to the facility was a convenience that saved them cost because they could walk to the facility.

"I stay around here and it is the hospital that is closest to me, I see no need in going elsewhere"

"Many of us attending clinic here come from around and this is the government facility here that offers HIV services, that is why we opt to come here."

Very few lived far from the health care facility but would still travel the distance for various reasons, mostly because they are comfortable with the quality of services provided at the services and the rapport already established with the health care workers of the facilities they are enrolled in.

"I stay far nowadays after relocating, but since I established good relationship with healthcare providers in this facility, my privacy is guaranteed thus not ready to take a transfer I might be exposed. Furthermore, since the introduction of differentiated care management, I can spend less time at the facility therefore am comfortable."

4.8.2 Reasons of choice of facility

Staff friendliness, close proximity to the health facility and what the participants considered to be high standards of service delivery were the most common reasons given for the choice of where to receive HIV services.

Other factors that contributed to the choice of facility were the size of the hospital, constant supply of drugs (no stock outs) and continuity of care given that is the facility where they got diagnosed with HIV

4.8.3 Waiting time for stable patients on differentiated care compared to unstable patients

Responses all pointed towards a shorter waiting time for stable patients on differentiated care. Participants cited being able to be more productive at work with less absenteeism as before as the greatest benefit.

"You can't compare! In differentiated services, the waiting time is shorter since the patients come to the clinic at different dates reducing long ques that used to be experienced in non-differentiated services. This Differentiated Services of nowadays have brought to us many benefits; you can go to work without spending most of the time coming to the hospital'

"Differentiated care is very time saving especially for work. It is possible to get permission from work to attend clinic. Even the waiting time is also shorter because nowadays, you get fewer people queuing, not like before when we would que for long

Participants were able to make a clear distinction between the previous model that required them to come frequently and que for all services and cause congestion at the clinics.

"In this model (Differentiated Services Delivery) the waiting is much shorter as compared to before since some of the patients do come directly to pharmacy for collection of drugs without necessarily going to see the doctors again. It has reduced time because we don't all have to come here all the time."

"It's very short and am comfortable"

4.8.4 Receipt of all services

Majority of the respondents felt they received all the services they required and even listed the services. They felt that because they were triaged, given treatment literacy, screened for cervical cancer (for female participants) and got drugs that they had received all the Services.

"Yes we do receive all the services we require for example we are given counseling, checking of our blood pressure, cancer screening and weight measurement. We are also advised on diets".

"With me I can also say that I do get all Services I need since drug collection and refill appointment is easier, I have never missed drugs here in Kiambu and also for other illnesses like malaria; the drugs are always available"

Some participants however, had experienced instances where they had to seek some medical services elsewhere given that they had co-morbidities that required either specialized expertise or medication that was not readily available

"No, I do not receive all the services I require: in case I am sick I don't get any service for instance am diabetic and any time I need medical attention regarding my condition, am send outside the facility where am forced to pay for it, further more I fear for my privacy and victimization issues if such services are not re-introduced to this facility."

4.8.5 Benefits experienced since starting differentiated care

A number of benefits were spelt out by the participants. They had experienced reduction in travel time and cost that were associated to reduction in the frequency of clinic visits. Participants shared how the reduced frequency had improved work relations and work schedules and had an effect on reduced stigma at the work place because of reduced suspicion unlike before when frequent hospital visits raised speculation.

For some, they felt that the decongested clinic offered them an opportunity to have enough time for a consultation with the clinician

Reduction in waiting time was also cited as a major benefit that greatly improved work schedules and relations with supervisors at work.

Because majority of those enrolled on differentiated care are on first line treatment, they have benefited from a treatment regimen change that has seen them take a tablet just once a day as fixed dose formulations. This has reduced the pill burden and frequency of medication. Participants cited this as a benefit they have experienced.

4.8.6 Health care worker interaction

Majority of the respondents felt that the health care workers were respectful and friendly and they could interact freely. They felt they could ask questions or even reschedule appointments

"They are also very respectful and we are given enough time for asking questions and being answered"

"*Health care workers here are ok. We don't have any problems with them because they take care of us well and when you can't make it for an appointment, you just call them and they help you reschedule."*

In one of the facilities, however, a nurse who often sits at triage was cited as being unfriendly and rude to an extent that the patients are not comfortable interacting with her and would want her moved.

Our interaction with the health Care workers in this hospital is good except for one nurse. I don't want to lie, some patients in this facility complain. She is usually in the room for measuring weight. She speaks to the patients harshly and she is always upset. …… Some of us are afraid of even interacting with her leave alone asking questions. She is very harsh

4.8.7 Duration for interaction with health care workers during a clinic visit

The general feedback was that the time for interaction with health care workers was adequate. They were able to ask questions and get answered in an environment that is not rushed. They felt that the health care workers were also able to interrogate how they are faring and they left the facility feeling content.

"The time we spend with health care workers is enough to as since they give as adequate time to ask questions and you are responded very well. You are asked how you are feeling."

"I feel that the duration given to as during appointment for interaction with the health care team is enough especially in this differentiated services. We are given enough time to also ask questions, seek clarifications and leave the hospital contented."

4.8.8 Joint decision making

Consultation on the most preferred return date during appointment scheduling was the most mentioned reason given for feeling that decisions concerning their health are done jointly. Equally, being called by health care workers to be notified of changes in appointments made them feel the same.

Other reasons cited for supporting the view that decisions were made jointly were being called to discuss progress once viral load results were received back at the facility and the fact that they could get a change of treatment once they communicated that they were experiencing side effects to medication.

"When blood samples for viral load are taken, after some time they call you back to discuss the results. Should there be need; one is advised on better living and how to take drugs."

"Yes; we are usually involved in decisions concerning our health. For example, if ones' body doesn't react very well with a particular drug, you can tell the doctors then they change for you."

4.8.9 Extent of satisfaction with differentiated services

Responses to this question were towards satisfaction for differentiated services. The participants went further to explain reasons for their satisfaction and they were majorly similar to the benefits they and experienced in the program: savings in time and cost, reduction in the frequency of clinic visits, reduced waiting time,

4.8.10 Recommendations of focus group participants on differentiated service delivery

Recommendations made by participants that directly involved differentiated services were on reduction of drug stock outs that necessitated them to come back in between appointments, having a ´one-stop-shop´ for all services at the comprehensive care center, repackaging of drugs and having even longer appointments.

Contrary to results from the quantitative arm of the study that showed participants were able to receive all services in one visit, the focused group discussions brought out instances when patients were not able to receive all the drugs that would cover up to their next appointment. Additionally,

during the course of the year, the country implemented a drug regimen change that warranted closer monitoring and so patients could not immediately get three months' worth of drugs.

Participants expressed the need to have all services delivered to them within the confines of the comprehensive care center. They felt that having drugs for co-morbidities should be stocked in the CCC pharmacy as opposed to just ARVs and queuing again at the main pharmacy. Additionally, samples for blood tests could also be drawn within the CCC as opposed to queuing at the laboratory. They felt this would further reduce the waiting time. This concept of ´one-stop-shop´ extended to having test results available for review by the time they come for an appointment as opposed to the delays that have sometimes been experienced and necessitated a request to review in the next appointment which caused anxiety for another 3 or so months.

Given the increased duration between appointments, the drugs they leave the facility with are many. Participants felt the packaging of the drugs needs to be re-thought because the current packages make so much noise when shaken. To avert stigma, they felt this noise would expose them while in transit and possibly bring about unintended disclosure. Thy recommended more discreet packaging.

In line with the benefits of time and cost saving experience by participants, they felt that the duration between appointments could reduce further. They gave suggestions of up to 6 monthly drug refill appointments and annual clinical appointments. Additionally, longer operating hours (an earlier clinic start of say 6.00 am and later closing of say 6.00pm)

Other general recommendations made were to incorporate nutritional support, mosquito net distribution, and economic empowerment programs. They also felt that services such as cervical

cancer screening and medication for co-morbidities should be free. Refreshments while at the clinic, and patient seminars were additional recommendations.

4.8.11 Prevailing themes

Reduction in waiting time leading to time saving, the reduction in frequency of clinic visits leading to savings in cost and health care worker respect were brought out strongly in the focused group discussions. Similarly, they were also identified as having strong association to satisfaction in the quantitative arm of the study

CHAPTER 5: DISCUSSION

It is documented from a number of studies that measurements of overall satisfaction generally tend to be high- over 90 (as is the case in this study) and this is thought to be because the consumers of the services are uncritical and allow deterioration of services before expressing dissatisfaction (Hospital, 1994)

5.1 Patient characteristics and satisfaction

The ability of a patient to be able to self-care while on DSD is critical in its implementation. This ability largely depends on the patient's knowledge of their condition as well as the components of DSD

Health education and coaching is a prerequisite to self-efficacy to enable improved quality of life (Cinar and Schou, 2014). Patient knowledge stood out to be the patient characteristic strongly associated with satisfaction. This was for both knowledge of condition ($P<0.001$), which needs to be understood by the patient before they are introduced to longer appointments, and knowledge of components of differentiated services ($P<0.001$). Additional questions gauging specific knowledge components on HIV and DSD revealed contrary information to the prior findings.

Although majority of the respondents considered themselves knowledgeable on DSD (95% n=402) responses revealed that 90% did not understand the client flow (not seeing a clinician) during a refill appointment. This may be due to a default client flow structure at the facility that necessitates a client to pass through the clinicians' rooms during a refill appointment or clinicians roles (dispensing treatment).

Variables that had a positive Somers' d value were considered to have a positive directional relation with patient satisfaction. Despite marital *(d=-0.112, phi=0.215, p<0.05)* and employment status *(d=-0.121, phi=0.151, p<0.05)* having some correlation with satisfaction, the association was not considered to be strong. Further, it showed that those who were single and those unemployed were likely to be more satisfied than those who were married/ cohabiting or employed.

5.2 Access and patient satisfaction

Studies have found that the close proximity does not always lead to satisfaction(Am *et al.*, 2015) possibly because of ease of access and perception in cost saving. In this study, while distance between residence and facility showed some positive association to satisfaction *(p=<0.05*) on further analysis *(phi=0.396, d=0.139),* the association was found to be weak meaning it is not necessarily a determinant of satisfaction in differentiated services.

Waiting time (*phi=0.547, p=<0.05*), its overall reduction from the previous model, was a strong determinant of patient satisfaction. Participants also reported being very satisfied with the current waiting time. The study did not measure satisfaction at the different waiting times between one health care provider to the next, rather, it sought to determine satisfaction with overall waiting time as time spent from the time one arrives at the facility to the time one exits the health facility. A study conducted in Uganda on cost effectiveness of a pharmacy refill program compared to a standard of care program as part of its study, conducted a time and motion survey to estimate worker and patient time use and reported an overall reduction in lost patient time (Babigumira *et al.*, 2011).

While it was not the purpose of this study to determine the extent to which cost and time has been saved while receiving care under DSD, participants considered perceived savings in cost and saving in time to be the greatest benefits they experienced in this model. Differentiated services have been documented to be cost effective for both the health care system and the patient as well as compared to the previous standards of care model that had higher transport costs for the patient due to the frequent clinic visits (Babigumira *et al.*, 2011).

Modification of behavior to protect dignity and safety is not uncommon among HIV positive patients because of fear of stigma and discrimination. They experience biases that restrict employment activities and achievement of other goals (GNP+, 2018). Participants in the study expressed the infrequent clinic visits as having a positive workplace influence and perceived stigma reduction because their absenteeism was not glaring and they no longer had to explain why they had to attend clinic visits so frequently.

There seemed to be a contrast between what participants understood as the requirement and the actual practice. From the questionnaire, participants generally felt they did receive all services they required but this did not seem to be consistent with discussions held during the focused group discussions. The discussions brought out cases of drug stock outs that necessitated a separate visit to get a refill, also, those with co-morbidities needed to seek treatment and consultation elsewhere because their drugs were not accessible through the HIV clinic.

With Human resources for health being less than the WHO recommendation (WHO, 2016), DSD was to address this challenge by distribution of roles across carders and incorporate engagement of lay workers to handle(Kenya Ministry of Health, 2017), among other roles, ART distribution(NASCOP, 2017) This benefit, however, may not be fully experienced yet 54% of

the participants reported queuing to see all carders of staff during a refill visit. This may be due to the fact that the same staff may be attending to them as a clinician and well as dispensing drugs in the same sitting. Similarly, 91% felt there would still be need to see a clinician during a refill appointment even if they were not ill yet ideally the visit should be an express visit where just vital signs are measured, adherence is assessed and drugs dispensed(NASCOP, 2017). Patient flow in this case may need to be assessed in order to reduce the waiting time even further

5.3 Health care worker characteristics

Unfriendly health care workers have at times been the cause of poor communication that may affect the quality of care; in contrast, a positive relationship between service providers and patients has a great effect on patient retention in care because it gives a sense of trust allowing for honesty (Yehia *et al.*, 2015). Of all the health care worker related characteristics, health care worker respect *(phi= 0.676, d= 0.636, p=<0.005)* was a significant determinant to satisfaction; not surprisingly, numerous studies identified respectful patient-health care worker relations as a facilitator to anti-retroviral adherence which contributes greatly to positive health outcomes (Croome *et al.*, 2017)

5.4 Study Limitations and delimitations

Given the length of time between appointments and the retrospective nature of some of the questions (especially touching on time) recall bias was a possible limitation. The study however relied on triangulation from the qualitative arm of the study to compare the general responses on timelines

With the assumption that an individual attends clinic in a facility they already like and are satisfied with, to eliminate bias while seeking satisfaction with the delivery model, data collection was done in several facilities.

To avoid causing unprecedented delays and feelings of coercion to participants, the questionnaire was brief and took only 20 minutes while the FGD took 45 minutes and consent was sought for voluntary participation

5.5 Strengths

The mixed method approach was considered to be a strength. The sample size for the quantitative arm was large and representative of the sample facilities while the focused group discussions gave further insights on and a deeper understanding of the responses received from the questionnaires

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

From the study findings, patients are satisfied with differentiated services and this points towards the policy change being a welcome move for the stable HIV positive patients enrolled in in the model. It has not only contributed to savings in time and perceived cost savings, but has also had a perceived reduction of stigma for the patients and improved work relations with colleagues because of reduced absenteeism at work. The success of this model is apparent from the numerous benefits experienced and shared by the participants. From the study findings, there was sufficient evidence to reject the first and second hypotheses and fail to reject the third hypothesis.

6.2 Recommendations

6.2.1 To health care workers and program managers

Enhanced patient education on patient literacy and DSD model and its components to address the misconceptions some patients may still have on condom use and how ARVs work to enhance self-efficacy.

Restructure patient flow to further reduce clinicians' workload and eliminate the need to see all carders of staff on a drug re-fill appointment

Facilities can embrace task shifting e.g. drug dispensing from clinicians to nurses or lay workers especially in resource limited settings

Stock up on medication/drugs for the common co-morbidities that the patients are known to be having to address access concerns and patient waiting time for these patients and avoid further delays by queuing for medication from a different pharmacy.

6.2.2 To Facility Managers

To implement regular multi-disciplinary team meetings to discuss service delivery improvement and utilizing data for decision making to monitor the progress of implementation of the model. Some of the data that can help evaluate the success of the model are retention rates, viral suppression and adherence scores.

6.2.3 To Sub-County Health Management Team

To increase access, commodity security remains an important component in the success of the health care system. For differentiated services to be sustainable, it would be important to look into the factors surrounding access to drugs to continue to experience the benefit of less frequent clinic visits as part of the design of the model that remains viable in reducing congestion in the chronic illness clinics.

With measures put in place to monitor adherence, it may be possible to lengthen the duration between appointments further.

REFERENCES

Agbor AN, Gael BAI, Brian A, et al. (2021) Predictorsof Loss to Follow-up in Patients on Antiretroviral Treatment in Centre Hospitalier Essos, Cameroon. Clin J HIV AIDS 5(1):62-69

Am, A. *et al.* (2015) 'Association Between Orthopaedic Outpatient Satisfaction and Non-Modifiable Patient Factors', pp. 1041–1048.

Austin, P. C. and Steyerberg, E. W. (2017) 'Events per variable (EPV) and the relative performance of different strategies for estimating the out-of-sample validity of logistic regression models', *Statistical Methods in Medical Research*, 26(2), pp. 796–808. doi: 10.1177/0962280214558972.

Babigumira, J. B. *et al.* (2011) 'Cost Effectiveness of a Pharmacy-Only Refill Program in a Large Urban HIV / AIDS Clinic in Uganda', 6(3), pp. 1–7. doi: 10.1371/journal.pone.0018193.

Batbaatar, E. *et al.* (2017) 'Determinants of patient satisfaction: A systematic review', *Perspectives in Public Health*, 137(2), pp. 89–101. doi: 10.1177/1757913916634136.

Candace M. Miller, Mpefe K., Heather R. and Sydney Rosen (2010). Why are antiretroviral treatment patients lost to follow-up? A qualitative study from South Africa: Tropical Medicine and International Health. volume 15 suppl. 1 pp 48–54. doi:10.1111/j.1365-3156.2010.02514

Carlin, C. S. *et al.* (2012) 'Chronic illness and patient satisfaction', *Health Services Research*, 47(6), pp. 2250–2272. doi: 10.1111/j.1475-6773.2012.01412.x.

Chimbindi N et al (2014) 'Patient satisfaction with HIV and TB treatment in a public programme in rural Kwazulu Natal: evidence from patient exit interviews', *BMC Health Service Research*, 14(32). doi: http://dx.doi.org/10.1186%2F1472-6963-14-32.

Cinar, A. B. and Schou, L. (2014) 'Interrelation between Patient Satisfaction and Patient-Provider Communication in Diabetes Management', 2014. doi: 10.1155/2014/372671.

Croome, N. *et al.* (2017) 'Patient-reported barriers and facilitators to antiretroviral adherence in sub-Saharan Africa', *AIDS*. Lippincott Williams and Wilkins, pp. 995–1007. doi: 10.1097/QAD.0000000000001416.

Fuentes, L. *et al.* (2015) 'Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection', 93(4), pp. 292–297. doi: 10.1016/j.contraception.2015.12.017.Women.

Geldsetzer, P., Ortblad, K. and Bärnighausen, T. (2016) 'The efficiency of chronic disease care in sub-Saharan Africa', *BMC Medicine*. BMC Medicine, 14(1), pp. 8–11. doi: 10.1186/s12916-016-0675-6.

GNP+ (2018) 'HIV Stigma and Discrimination in the World of Work: Findings from the People Living with HIV Stigma Index Evidence Brief', (July), p. 28.

Healy, L. M. (2017) *Logistic Regression: An Overview*. doi: 10.1017/CBO9781107415324.004.

Huang JA, Lai CS, Tsai WC, Hu WH, Yang DW. Determining factors of patient satisfaction for

frequent users of emergency services in a medical center. J Chin Med Assoc. 2004;67(8):403–10

Hospital, W. (1994) 'Patient Satisfaction : a Valid Concept !', 38(4), pp. 509–516.

International AIDS Society (2016) *Differentiated care for HIV: Frame Works For antiretroviral therapy delivery, Differentiated care for HIV: Frame Works For antiretroviral therapy delivery*.

Kenya Ministry of Health (2017) 'Task Sharing Policy Guidelines 2017-2030', p. 129.

Kenya Ministry Of Health (2011) *Guidelines for antiretroviral therapy in Kenya 4*.

Kenya National Bureau of Statistics (2019) *Kenya Population and Housing census vol 2*, p.11

Knight, L. (2008) *UNAIDS; the first 10 years, 1996-2006, Aids*.

Krentz HB, Cosman I, Lee K, Ming JM, Gill MJ. Pill burden in HIV infection: 20 years of experience. Antivir Ther. 2012;17(5):833-40. doi: 10.3851/IMP2076. Epub 2012 Feb 23. PMID: 22358155

Mehra, P. (2015) 'Outpatient clinic waiting time, provider communication styles and satisfaction with healthcare in India', *International Journal of Health Care Quality Assurance*, 28(8), pp. 841–854.

Mirzaei, M. *et al.* (2013) 'A patient-centred approach to health service delivery: improving health outcomes for people with chronic illness', *BMC Health Services Research*. BMC Health Services Research, 13(1), p. 251. doi: 10.1186/1472-6963-13-251.

NACC (2016) *Kenya HIV County Profiles 2016*. Available at: http://nacc.or.ke/wp-content/uploads/2016/12/Kenya-HIV-County-Profiles-2016.pdf.

NACC (2018) 'Kenya HIV Estimates 2018', *Kais*, pp. 1–28. doi: 10.1111/j.1365-2664.2007.0.

NASCOP (2017) *DIFFERENTIATED CARE: Operational Guide*.

NASCOP (2018) *Kenya ARV Guidelines 2018*.

Olowookere, S. A. *et al.* (2012) 'Reducing waiting time at a Nigerian HIV treatment clinic: Opinions from and the satisfaction of people living with HIV/AIDS', *Journal of the International Association of Physicians in AIDS Care*, 11(3), pp. 188–191. doi: 10.1177/1545109711402214.

Préau, M. *et al.* (2012) 'Satisfaction with care in HIV-infected patients treated with long-term follow-up antiretroviral therapy: The role of social vulnerability', *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, 24(4), pp. 434–443. doi: 10.1080/09540121.2011.613909.

Prentice, J. C., Davies, M. L. and Pizer, S. D. (2014) 'Which Outpatient Wait-Time Measures Are Related to Patient Satisfaction?', *American Journal of Medical Quality*, 29(3), pp. 227–235. doi: 10.1177/1062860613494750.

Samuel Ofei-Dodoo Ghana Med J 2019; 53(1): 63-70 http://dx.doi.org/10.4314/gmj.v53i1.10

S. K. Lwanga, S. L. (1991) 'Sample size determination in health studies: a practical manual', in.

World Health Organization: Geneva.

Timothy N. C., Alice T. (2017). Retention in Continuous Care and Sustained Viral Suppression: Examining the Association among Individuals Living with HIV. Journal of the International Association of Providers of AIDS Care, Vol. 16(1) 42–47. doi: 10.1177/2325957416678929

Torpey, K. *et al.* (2016) 'a Synopsis of Differentiated Care for Art Program Managers', (July). Available at: https://www.fhi360.org/sites/default/files/media/documents/resource-differentiated-hiv-care.pdf.

UNAIDS (2021) 'UNAIDS data 2021'. Available at: http://www.unaids.org/en/resources/documents/2018/unaids-data-2021.

Vella, S. *et al.* (2012) 'The history of antiretroviral therapy and of its implementation in resource-limited areas of the world', *Aids*, 26(10), pp. 1231–1241. doi: 10.1097/QAD.0b013e32835521a3.

W.Creswell, J. (2000) *Research Design, Third Edition*.

de Waard, C. S. *et al.* (2018) 'Perceived doctor-patient relationship and satisfaction with general practitioner care in older persons in residential homes', *Scandinavian Journal of Primary Health Care*. Informa UK Limited, trading as Taylor & Francis Group, 36(2), pp. 189–197. doi: 10.1080/02813432.2018.1459229.

Wekesa et al. (2020) Factors associated with 36-month loss to follow-up and mortality outcomes among HIV-infected adults on antiretroviral therapy in Central Kenya BMC Public Health 20:328 https://doi.org/10.1186/s12889-020-8426-1

WHO (2006) *Antiretroviral Therapy For HIV Infection In Adults and Adolescents: Recommendations for a public health approach 2006 revision.*

WHO, (2013) 'Consolidated guidelines on the use of Antiretroviral drugs for treating and preventing HIV infection. Recommendation for a public health approach', *Who 2013 Consolidated Guideline*, (June). doi: ISBN 978 92 4 150572 7.

WHO (2016) 'Global strategy on human resources for health: workforce 2030', *Global strategy on human resources for health: workforce 2030*. Available at: http://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf?sequence=1.

Yehia, B. R. *et al.* (2015) 'Barriers and facilitators to patient retention in HIV care', *BMC Infectious Diseases*. BMC Infectious Diseases, 15(1), pp. 1–10. doi: 10.1186/s12879-015-0990-0.

7.0 APPENDICES

7.1 Standard package of care

Component of Standard Package of Care	Subcomponents
Antiretroviral therapy (ART)	• Patient preparation • ART • Monitoring (clinical and laboratory)
Positive health, dignity and prevention; gender-based violence (GBV) and intimate-partner violence (IPV) screening; and HIV education/counselling	• Positive health, dignity and prevention components o Disclosure o Partner/family testing o Condom use o Family planning o STI screening, prevention, and treatment o Adherence counselling and support • GBV/IPV screening and support • HIV education/counselling
Specific opportunistic infection screening and prevention	• Cotrimoxazole preventive therapy • Tuberculosis (TB) o Intensified case finding o Isoniazid preventive therapy o ART for TB/HIV co-infected patients • Cryptococcal meningitis
Reproductive health services	• Sexually transmitted infections screening and management • Family planning and pre-conception services • Maternal healthcare • Cervical cancer screening
Non-communicable diseases screening and management	• Hypertension • Diabetes mellitus • Dyslipidaemia • Chronic kidney disease • Other NCDs
Mental health screening and management	• Depression • Alcohol and drug use/addiction
Nutritional services	• Assessment • Counselling and education • Management and support
Prevention of other infections	• Immunizations • Malaria • Safe water, sanitation and hygiene

Kenya HIV Guidelines, 2018

7.2 Differentiated care based on initial patient presentation

Patients who Present with Advanced HIV Disease: WHO Stage 3 or 4, or CD4 count ≤ 200 cell/mm3 (or ≤ 25% for children ≤ 5 years old) Package of Care	
Package of care	Standard Package of Care (Section 4) • Intensive management of presenting illnesses and malnutrition • Priority for identification, management and prevention of OIs, including o GeneXpert for TB diagnosis for all PLHIV with presumptive TB o TB-LAM (Figure 8.3), in addition to GeneXpert, for PLHIV with presumptive TB who ▪ Have advanced HIV, or ▪ Have signs of severe illness, or ▪ Are currently admitted to hospital o Cryptococcal antigen screening for adolescents and adults with CD4 ≤ 200 cells/mm3 or clinical suspicion of meningitis (any age) (Figure 4.1) o Cotrimoxazole Preventive Therapy (CPT) o Isoniazid Preventive Therapy (IPT) • Priority for ART initiation (caution if suspected or confirmed TB, TB meningitis, or Cryptococcal meningitis; Table 6.1) • Close monitoring for development of immune reconstitution inflammatory syndrome (IRIS
Location of care	Management at any ART service delivery point; all facility levels Initial management and ART initiation by trained and experienced HCW Consultation with MDT, TWG, mentors, and senior clinicians as needed (including telephone consultation such as Uliza! Clinicians' HIV Hotline) Referral to a higher-level facility when feasible if consultation is not adequate to stabilize the patient
Focus of treatment preparation counselling	ART is required to prevent further damage to the immune system Starting ART soon will decrease risk of disease progression, including wasting and other infections ART is the most important treatment to restore health ART will reduce the risk of transmitting HIV to others
Frequency of service	Weekly follow-up until ART initiation, and then at week 2 and 4 after ART initiation, and then monthly until confirmed viral suppression More frequent visits or hospitalization may be required to stabilize acute medical conditions and address psychosocial and other concerns
Patients who Present Well: WHO Stage 1 or 2, and CD4 count > 200 cell/mm3 (or > 25% for children ≤ 5 years old)	
Package of care	Standard package of care
Location of care	Management at any ART service delivery point; all facility levels Initial management and ART initiation by trained and experienced HCW
Focus of treatment preparation counselling	ART is the most important treatment to maintain good health and an active life • Starting ART soon will decrease risk of developing wasting and other infections
Frequency of service	Weekly follow-up until ART initiation, and then at week 2 and 4 after ART initiation, and then monthly until confirmed viral suppression • Additional visits as required to address any medical or psychosocial concerns

Kenya HIV Guidelines, 2018

7.3 CONSENT FORM ENGLISH VERSION

PARTICIPANT INFORMATION AND CONSENT FORM ADULT CONSENT FOR ENROLLMENT IN THE STUDY

Title of Study: Patient knowledge, experience and preferences towards differentiated service deliver in HIV in Kiambu County

Principal Investigator\and institutional affiliation: Beatrice May from University of Nairobi

Introduction:

Kindly allow me to tell you about a study being conducted by the above mentioned researcher. The purpose of this consent form is to give you the information you will assist you make a decision on whether or not to participate in the study. You are highly encouraged to ask any questions to seek better understanding on the overall study, risks, and benefits or seek clarification on areas that are unclear concerning the study. You will make a decision on whether to participate or not once we have answered your questions and addressed all your concerns to your satisfaction. This process is called 'informed consent'. Should you agree to participate in the study, I will request you to sign your name on this form. Your participation in this study is entirely voluntary and you may withdraw from the study at any time without necessarily giving a reason for your withdrawal. Should you opt not to participate in the study; it will have no effect whatsoever on the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your records.
May I continue? **YES / NO**

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol No. **P379/05/2019**

WHAT IS THIS STUDY ABOUT?

The researcher listed above is interviewing individuals who are or have received HIV services under differentiated service delivery. The purpose of the interview is to find out the overall satisfaction level while under this model but also their experiences and preferences on the same. Participants in this research study will be asked questions about personal characteristics, the level of ease they have experienced in accessing services under this model, the waiting times at the facility, and the characteristics of the health care workers who serve them. There will be approximately 385 participants in this study randomly chosen from this and other health care facilities in Kiambu county that have implemented . We are asking for your consent to consider participating in this study.

WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY?

If you agree to participate in this study, you will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview will last approximately 20 minutes and will cover topics such as how old you are, whether you are married, the extent to which you understand your condition, how much time you spend at the facility, if you feel comfortable interacting with the health care providers and to what extent they treat you with respect.
After the interview is complete, should you have any other health concerns you require addressed, we will link you to the health care workers within the facility to take appropriate action. We will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. The reasons why we may need to contact you is to invite you for a second part of the study that involves a group discussion on the same topic.

ARE THERE ANY RISKS, HARMS DISCOMFORTS ASSOCIATED WITH THIS STUDY?

Medical research has the potential to introduce psychological, social, emotional and physical risks. Effort should always be put in place to minimize the risks. One potential risk of being in the study is loss of privacy. We will keep everything you tell us as confidential as possible. We will use a code number to identify you in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system

of protecting your confidentiality can be absolutely secure, so it is still possible that someone could find out you were in this study and could find out information about you. Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any questions asked during the interview.
In case of an injury or illness that may manifest during the course of this interview, the study staff will refer you the facility clinical team for management.

ARE THERE ANY BENEFITS BEING IN THIS STUDY?

While there are no direct benefits, the information you provide will help us better understand how to improve the delivery of HIV services in differentiated Service delivery.

WILL BEING IN THIS STUDY COST YOU ANYTHING?

Being in the study will not cost you anything other than the time spent participating in the study.

WILL YOU GET REFUND FOR ANY MONEY SPENT AS PART OF THIS STUDY?

Should you be randomly selected to participate in the focused group discussion, you will get a refund of the transport used to attend the discussion.

WHAT IF YOU HAVE QUESTIONS IN FUTURE?

If you have further questions or concerns about participating in this study, please call or send a text message to the study staff at the number provided at the bottom of this page. For more information about your rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh_erc@uonbi.ac.ke.

WHAT ARE YOUR OTHER CHOICES?

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

CONSENT FORM (STATEMENT OF CONSENT)

Participant's statement

I have read this consent form or had the information read to me. I have had the chance to discuss this research study with a study assistant. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study. I understand that all efforts will be made to keep information regarding my personal identity confidential. By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study:	Yes	No
I agree to provide contact information for follow-up:	Yes	No

Participant printed name: _____

Participant signature / Thumb stamp _____ Date _____

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above

and believe that the participant has understood and has willingly and freely given his/her consent.
Researcher's Name: _____ Date: _____

Signature _____

Role in the study: Research assistant *[i.e. study staff who explained informed consent form.]*
For more information contact Beatrice May at 0739527696 from 9.00 am to 4.00 pm

Witness Printed Name (*If witness is necessary, A witness is a person mutually acceptable to both the researcher and participant*)

Name _____ Signature /Thumb stamp: _____

Contact information _____ Date; _____

7.4 CONSENT FORM KISWAHILI VERSION

HABARI YA WASHIRIKI NA FOMU YA IDHINI YA USAJILI KATIKA UTAFITI

Kichwa cha Utafiti: Maarifa ya mgonjwa, uzoefu na upendeleo kwa huduma tofauti kwa walio na HIV katika Kiambu County

Mtafiti Mkuu na ushirikiano wa taasisi: Mei Beatrice kutoka Chuo Kikuu cha Nairobi

Utangulizi:

Tafadhali niruhusu nikuambie kuhusu utafiti unaofanywa na mtafiti aliyetajwa hapo juu. Madhumuni ya fomu hii ya ridhaa ni kukupa taarifa itakayo kusaidia kufanya uamuzi kushiriki katika utafiti. Unahimizwa sana kuuliza maswali yoyote ili uelewa bora juu ya utafiti, hatari, na faida au kutafuta ufafanuzi katika maeneo ambayo haijulikani kuhusu utafiti. Utafanya uamuzi juu ya kushiriki mara tu tumejibu maswali yako na kushughulikia matatizo yako yote kwa kuridhika kwako.
Utaratibu huu unaitwa 'kibali cha habari'. Utakapo kubali kushiriki katika utafiti huu, nitakuhitaji usaini jina lako kwenye fomu hii. Ushiriki wako katika utafiti huu ni kwa hiari na unaweza kujiondoa wakati wowote bila kutoa sababu ya uondoaji wako.

Kushiriki katika utafiti haitakuwa na athari yoyote kwa huduma unazopokea kwenye kituo hiki cha afya au vifaa vingine. Tutakupa nakala ya fomu hii kwa rekodi zako.

Naweza kuendelea? **NDIO/ LA**

Utafiti huu una kibali na Maadili na Utafiti wa Kamati ya Utafiti (Ushirikiano kati ya Kliniki ya Taifa ya Kenyatta na Chuo Kikuu cha Nairobi)

UTAFITI WAHUSU NINI?

Mtafiti aliyeorodheshwa hapo juu anahojiana na watu ambao wamepata huduma za HIV au wamepata utoaji wa huduma tofauti. Kusudi la mahojiano ni kujua kiwango cha jumla cha kuridhika na huduma hizi na mapendekezo yao sawa. Washiriki katika utafiti huu wa utafiti wataulizwa maswali kuhusu sifa za kibinafsi, kiwango cha urahisi ambao wamepata uzoefu katika kupata huduma chini ya mfano huu, wakati wa kusubiri kwenye kituo na sifa za wafanyakazi wa huduma za afya wanaowahudumia. Kutakuwa na washiriki wa karibu 385 katika utafiti huu kwa nasibu waliochaguliwa kutoka kituo hiki na vituo vingine vya huduma za afya katika kata ya Kiambu ambayo imetekelezwa. Tunaomba ridhaa yako kufikiria kushiriki katika utafiti huu.

TARATIBU YA UTAFITI

Ikiwa unakubali kushiriki katika utafiti huu, utaulizwa maswali na mhojiwaji mwenye ujuzi katika eneo la kibinafsi. Mahojiano yataendelea kwa muda wa dakika 20 na itafikia mada kama vile umri wako, ikiwa umeolewa, kiwango ambacho unaelewa hali yako ya afya, muda gani unatumia katika kituo hiki, ikiwa unajisikia huru na kuridhishwa na wahudumu katika kituo hiki cha afya. Baada ya mahojiano kukamilika, ikiwa una matatizo mengine ya afya unahitaji kushughulikiwa, utaunganisha kwa wafanyakazi wa huduma za afya ndani ya kituo ili kuchukua hatua sahihi. Tutaomba namba ya simu ambapo tunaweza kuwasiliana na wewe ikiwa ni lazima. Ikiwa unakubaliana kutoa maelezo yako ya mawasiliano, itatumiwa tu na watu wanaofanya kazi kwa ajili ya utafiti huu na kamwe hawatashirikiwa na wengine. Sababu ambazo tunaweza kuwasiliana na wewe ni kukualika kwa sehemu ya pili ya utafiti ambayo inahusisha majadiliano ya kikundi kwenye mada sawa.

JE, KUNA MAADILI AU MAGONJWA YANAYOTOKANA NA UTAFITI HUU?

Utafiti wa matibabu una uwezo wa kudhuru mtu kisaikolojia, kijamii, kihisia na kimwili. Jitihada zinapaswa kuwekwa ili kupunguza hatari. Hatari moja ya kuwa katika utafiti huu ni kupoteza faragha. Tutaweka kila kitu unachotuambia kama siri iwezekanavyo. Tutatumia namba kukutambua kwenye kompyuta iliyohifadhiwa na nenosiri na tutahifadhi rekodi

zote za karatasi kwenye baraza lililofungwa. Hata hivyo, hakuna mfumo wa kulinda siri yako inaweza kuwa salama kabisa, kwa hiyo bado inawezekana kwamba mtu anaweza kujua wewe ulikuwa katika utafiti huu na anaweza kupata habari kukuhusu. Pia, kujibu maswali katika mahojiano inaweza kupa wasiwasi. Ikiwa kuna maswali yoyote unayotaka kutojibu, unaweza kuyaruka. Una haki ya kukataa mahojiano au maswali yoyote yaliyoulizwa wakati wa mahojiano. Ikiwa kuna jeraha au ugonjwa ambao unahitaji matibabu, wafanyakazi wa utafiti watakuelekeza t kwa kliniki au wauguzi.

JE, KUNA FAIDA YOYOTE KUWA KATIKA MAFUNZO HAYA?

Ingawa hakuna faida ya moja kwa moja, maelezo unayoyatoa itatusaidia kuelewa vizuri jinsi ya kuboresha utoaji wa huduma za HIV katika utoaji wa huduma tofauti.

JE, KUNA GHARAMA YA KUWA KATIKA UTAFITI?

Kuwa katika utafiti hakitakugharimu chochote isipokuwa wakati uliotumika kushiriki katika utafiti

JE, UTAPATA MAPATO KWA FEDHA AMBAZO UMETUMIA?

La, lakini ukipatakuchaguliwa kwa nasibu kushiriki katika mjadala uliozingatia kikundi, utapata marejesho ya usafiri uliyotumikia kuhudhuria.

UKIWA NA MASWALI ZAIDI JE?
Ikiwa una maswali zaidi au wasiwasi juu ya kushiriki katika utafiti huu, tafadhali piga simu au tuma ujumbe wa maandishi kwa wafanyakazi kwa ofisi ya Kamati ya Utafiti kwa namba iliyotolewa chini ya ukurasa huu.

Kwa habari zaidi kuhusu haki zako kama mshiriki wa utafiti unaweza kuwasiliana na Katibu / Mwenyekiti, Kenyatta National Hospital-Chuo Kikuu cha Nairobi Maadili na Utafiti Kamati Namba Namba 2726300 Ext. 44102 barua pepe uonknh_erc@uonbi.ac.ke.

NI CHAGUO ZIPI ZINGINE UNAZO?

Uamuzi wako wa kushiriki katika utafiti ni wa hiari. Una huru wa kukataa kushiriki katika utafiti huu na unaweza kujiondoa kwenye utafiti wakati wowote bila udhalimu au kupoteza faida yoyote.

FOMU YA IDHINI (MAELEZO YA KUTIKA)
Taarifa ya Mshiriki

Nimeisoma fomu hii ya idhini au nilisoma habari. Nimekuwa na fursa ya kujadili utafiti huu wa utafiti na msaidizi wa utafiti. Nimekuwa na maswali yangu akajibu kwa lugha ambayo ninayoelewa. Nimeelezwa hatari na faida. Ninaelewa kuwa ushiriki wangu katika utafiti huu ni kwa hiari yangu na kwamba ninaweza kujiondoa wakati wowote. Ninakubali kwa hiari kushiriki katika utafiti huu wa utafiti. Ninaelewa kwamba jitihada zote zitafanywa kuweka taarifa kuhusu utambulisho wangu binafsi. Kwa kusaini fomu hii ya kibali, sijaacha haki yoyote ya kisheria niliyoshiriki katika utafiti wa utafiti.

Nakubali kushiriki katika utafiti huu wa utafiti:	**Ndio/Hapana**
Nakubali kutoa taarifa ya mawasiliano kwa kufuatilia:	**Ndio/ Hapana**

Jina la kuchapishwa la mshiriki: _____

Saini / Kidole ya mshiriki _____Tarehe: _____

Taarifa ya Mtafiti

Mimi, mtafiti msaidizi, nimeeleze kikamilifu maelezo muhimu ya utafiti huu kwa mshiriki na kuamini kwamba mshiriki ameelewa na ametoa idhini yake kwa hiari.

Jina la Mtafiti: _____Tarehe: _____

_____

Sahihi: _____

Jukumu katika utafiti: _Mtafiti Msaidizi__[*i.e. wasomaji ambao walielezea fomu ya kibali cha habari.]*

Kwa habari zaidi wasiliana na _Beatrice May Kwa 0739527696_____ kutoka__saa Tatu_hadi saa Kumi_____

Jina la Kuchapishwa kwa Shahidi *(Ikiwa shahidi ni muhimu; shahidi ni mtu anayekubalika na mtafiti na mshiriki*)

Jina _____

Nambari ya mawasiliano : _____

Sahihi / Kidole_____ Tarehe: _____

7.5 QUESTIONNAIRE

FACILITY CODE:

PATIENT CODE:

Client preferences and needs survey
Date: DD_____ MM____ YYYY_____

A. Patients Characteristics

1. Gender
   ☐Female
   ☐Male
   ☐Other
2. How old were you as at your last birthday?
   _____

3. Marital Status
   ☐ Single
   ☐ Married/ cohabiting
   ☐ Separated/ Divorced
   ☐ Widowed

4. What is the highest level of education you have completed?
   ☐ None
   ☐ Primary
   ☐ Secondary
   ☐ College/University
5. Are you currently working (employed or self-employed?
   ☐ Yes
   ☐ No
6. To what extent would you say you have been taught and know about your condition of HIV and treatment you are on?
   ☐ Not knowledgeable at all 0
   ☐ Not Knowledgeable 1
   ☐ Uncertain 2
   ☐ Knowledgeable 3
   ☐ Very Knowledgeable 4

7. Would there still be need for one to use condoms when having sexual intimacy with a HIV positive partner and both of you are on ARV's?
   ☐ Yes
   ☐ No
8. How does HIV treatment work in the body
   ☐ Acts as a pain Killer
   ☐ Destroys all the HIV in the body
   ☐ Reduces the amount of HIV in the body and boosts the immune system
   ☐ Makes the nervous system more effective
9. What does having an 'Undetectable viral load' mean?
   ☐ Other people can't tell you have HIV
   ☐ You have been cured off HIV
   ☐ The level of the virus in the blood is so low it can't be detected and passing it to others is hard
   ☐ That one does not have to be so strict with timing of medication
10. To what extent would you say you have been taught and know about differentiated care?
   ☐ Not knowledgeable at all 0
   ☐ Not Knowledgeable 1
   ☐ Uncertain 2
   ☐ Knowledgeable 3
   ☐ Very Knowledgeable 4
11. What is the frequency of clinic visits in DSD as compared to the previous appointment system for those considered 'stable'?
   ☐ Less frequent
   ☐ Just the same
   ☐ More frequent
12. On a refill appointment, would there be need to see the clinician if you are not unwell?
   ☐ Yes
   ☐ No

B. Access

13. How much time does it take you to travel to the facility?

   _____

14. How would you describe the distance between your residence and the health facility
   ☐ Very far 0
   ☐ Far 1

☐ Uncertain 2

☐ Near 3

☐ Very Near 4

15. If far of very far in 14 above, what is the most probable reason you still opt to come to this facility for HIV management?
    ☐ It is actually the only facility around
    ☐ It is the only one offering HIV management services closest to where I live
    ☐ It is the one with good services as compared to others closer to me
    ☐ I fear the people near where I live knowing of my HIV status
    ☐ The health care workers here are very friendly compared to other facilities closer to me
16. How much time did you spend at the health facility while on differentiated service in your last visit?

    _____

17. How would you describe the waiting time at the facility in differentiated service as compared to before differentiated services?
    ☐ Too long 0
    ☐ Long 1
    ☐ Uncertain 2
    ☐ Short 3
    ☐ Very Short 4
18. Do you still have to que to see all carders of health care providers (other than drug collection) on refill days?
    ☐ Yes
    ☐ No

19. How satisfied are you with the waiting time for differentiated services?
    ☐ Very Dissatisfied 0
    ☐ Dissatisfied 1
    ☐ Uncertain 2
    ☐ Satisfied 3
    ☐ Very Satisfied 4

20. Have you ever missed an appointment or needed to reschedule you appointment to come earlier than your scheduled appointment date for one reason or another?
    ☐Yes
    ☐No

21. During a clinical appointment, do you receive all the services you need in one visit?
    ☐Yes
    ☐No

22. To what extent have the spaced appointments of differentiated services saved you time?

    ☐ Very Little 0
    ☐ Little 1
    ☐ Uncertain 2
    ☐ Much 3
    ☐ Very Much 4

23. To what extent have the spaced appointments of differentiated services saved you cost?

    ☐ Very Little 0
    ☐ Little 1
    ☐ Uncertain 2
    ☐ Much 3
    ☐ Very Much 4

Health Provider characteristics

24. Do you feel comfortable (able to ask questions and seek clarification relating to your condition) when interacting with health care workers?
    ☐Yes
    ☐No

25. To what extent to you feel the health care workers are respectful when talking to or interacting with you?

    ☐ Very Disrespectful 0
    ☐ Disrespectful 1
    ☐ Uncertain 2
    ☐ Respectful 3
    ☐ Very Respectful 4

26. Do you feel that the health care workers listen to you and understand your needs?

☐Yes

☐No

27. Do you consider the health care workers as being competent to treat you?

☐Yes

☐No

28. While at the health facility, do you think that you spend enough time with the health care worker?

☐Yes

☐No

29. Do you feel the health care workers create an atmosphere that allows you to ask questions and seek clarifications in regards to your health management?

☐Yes

☐No

30. Do you feel that decisions made concerning you management and health goals are made jointly with the health care worker?

☐Yes

☐No

31. To what extent are you satisfied with services offered under differentiated service delivery?

☐ Very Dissatisfied 0

☐ Dissatisfied 1

☐ Uncertain 2

☐ Satisfied 3

☐ Very Satisfied 4

7.6 FOCUSED GROUP DISCUSSION GUIDE

Discussion # _____ Date: (dd/mm/yyyy) _____
Target Population: _____ *(HIV positive patients receiving treatment and enrolled in differentiated service delivery)* County: _____ Sub-County: _____ Venue name: _____
No. of Participants: _____ (*Recommended: 7-10 participants*)
Facilitator: _____ Note taker 1: _____
Informed consent provided by all participants: Facilitator Signature: _____ Date: Start time: _____
A: Welcome and Introductions
Facilitator*: Greetings everyone and thank you for coming to this meeting. My name is ……and my colleagues are …….. and …….. We will start with introductions. Please tell us your nickname and one interesting thing about yourself that will help everyone to remember your nickname. [Introductions]* *F: (read out the Adult participation and consent form) Seek consent of each member.* *Those who opt out will be allowed to exit.*
Discussion Guide
1. How convenient would you consider the location of the health facility in relation to where you live 2. What are some of the reasons that make an individual choose the facility they go to for HIV management? 3. How does the waiting time for differentiated services compare with non-differentiated services? 4. Would you say you receive all the services you need in one visit? Explain 5. What benefits would you say you have experienced since you started differentiated services? 6. How would you describe your interaction with the health care workers? 7. During an appointment, how would you describe the duration you have for interaction with the health care team? Do you feel you room/time to ask questions and seek clarifications? 8. Do you feel that decisions made concerning you management and health goals are made jointly with the health care worker? 9. To what extent are you satisfied with differentiated services? 10. What recommendations would you make to improve differentiated services further (If any)
Closing and Thank You
Facilitator: *We have come to the end of our discussion. My colleagues and I thank you all for taking time to*

share your views with us. If you have questions you would like to ask, this is your opportunity. [Take questions and thank the participants and close].

End Time: ……

Field Notes: (Record observations that may be useful in either providing the context or interpreting the discussion)

7.7 ETHICAL BOARD APPROVAL

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/326

30th August, 2019

Beatrice May Onyango
Reg. No.H70/74385/2014
School of Public Health
College of Health Sciences
University of Nairobi

KENYATTA NATIONAL HOSPITAL APPROVED 30 AUG 2019 KNH|UoN-ERC P. O. BOX 20723 - 00202 NAIROBI

Dear Beatrice

RESEARCH PROPOSAL: PATIENT KNOWLEDGE, EXPERIENCE AND PREFERENCES TOWARDS DIFFERENTIATED SERVICE DELIVERY IN HIV IN KIAMBU COUNTY (P379/05/2019)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and approved your above research proposal. The approval period is 30th August 2019 - 29th August 2020.

This approval is subject to compliance with the following requirements:

a. Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b. All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
c. Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
d. Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
e. Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
f. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (Attach a comprehensive progress report to support the renewal).
g. Submission of an executive summary report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

7.8 KIAMBU COUTY RESEARCH APPROVAL

COUNTY GOVERNMENT OF KIAMBU
DEPARTMENT OF HEALTH SERVICES

All correspondence should be addressed to
HEAD HRDU – HEALTH DEPARTMENT
Email address: mndiritu@gmail.com
mkwasa@live.com
Mobile: 0721641516
0721974633

HEALTH RESEARCH AND DEVELOPMENT UNIT
P. O. BOX 2344 – 00900
KIAMBU

Ref. No: KIAMBU/HRDU/AUTHO/2019/10/08/Onyango BM

Date: 08 Oct 2019

TO WHOM IT MAY CONCERN,

RE: CLEARANCE TO CONDUCT RESEARCH IN KIAMBU COUNTY

Kindly note that we have received a request by **Ms. Beatrice May Onyango** of **University Of Nairobi** to carry out research in Kiambu County, the research topic being on ***"Patient Knowledge, Experience And Preferences Towards Differentiated Service Delivery In Hib In Kiambu County"***.

We have duly inspected her documents and found that she has been cleared by **Kenyatta National Hospital-University Of Nairobi** until **29 Aug 2020**. She thus does not need any further clearance with another regulatory body in order to conduct research within the county of Kiambu.

However, it is incumbent upon the facility in which the research is being carried out to ensure that they are conversant with the remit of the study and operate in line with their institutional norms on conducting research. This note also accords her the duty to provide feedback on her research to the county at the conclusion of her research.

DR. M. NDIRITU NDIRANGU
COUNTY HEALTH RESEARCH DEVELOPMENT UNIT
KIAMBU COUNTY

7.9 NACOSTI APPROVAL

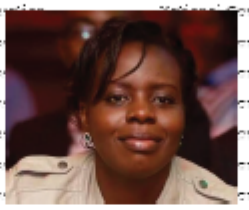
REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 388248

Date of Issue: 16/January/2020

RESEARCH LICENSE



This is to Certify that Ms.. Beatrice Beatrice of University of Nairobi, has been licensed to conduct research in Kisumu on the topic: Patient knowledge, experience and preferences towards differentiated service deliver in HIV in Kiambu County for the period ending : 16/January/2021.

License No: NACOSTI/P/20/2006

388248

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.