

**INFLUENCE OF HEALTH BELIEF MODEL ON QUALITY OF RETENTION IN
CARE OF PATIENTS ON ANTIRETROVIRAL TREATMENT IN BONDO SUB
COUNTY; SIAYA COUNTY, KENYA**

BY

JAIRUS BARASA OUMA

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DECLARATION

This Research Project Report is my original work and has not been presented in any other University for the award of a degree

Sign_____ Date: _____

Jairus Barasa Ouma

L50/82608/2015

This Research Project Report has been submitted for examination with my approval as the University supervisor:

Sign_____ Date: _____

Dr. Peter K. Nzuki

Department of Education Programmes,
School of Open and Distance Learning,
University of Nairobi

DEDICATION

This research is dedicated to my beloved wife Ann Wambui, My daughter Michelina Nangira and My Son Alexander Ouma for their love, patience and encouragement throughout the study period.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
HIV	Human Immunodeficiency Virus
KAIS	Kenya AIDS Indicator Survey
KHQIF	Kenya HIV Quality Improvement Framework
KASF	Kenya AIDS Strategic Framework
LTFU	Lost to follow up from care
MoH	Ministry of Health
NACC	National AIDS Control Council
NASCOP	National AIDS and STI Control Program
PLWHA	People or Person Living with HIV and AIDS
CCC/PSC	Comprehensive Care Clinic/Patient Support Centre
QIT	Quality Improvement Teams
SCHMT	Sub County Health Management Team
TWG	Technical Working Group
UNAIDS	UNAIDS Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
WHO	World Health Organization

ABSTRACT

The purpose of this study was to establish the influence of Health Belief Model on quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya. The study was carried out in Bondo Sub County and had the following objectives: to assess the patient factors that influence quality retention in care of patients on antiretroviral treatment, to determine social factors that influence quality retention in care of patients on antiretroviral treatment, to establish the influence of drug factors on quality retention in care of patients on antiretroviral treatment, to determine the influence of economic factors on quality retention in care of patients on antiretroviral treatment and to assess the moderating influence of health system factors on quality retention in care of patients on antiretroviral treatment in Bondo Sub County. The target population of the study included County government and partner/MoH supported employees including Volunteer CHVs supporting HIV care and treatment services. A descriptive research design was adopted. Simple random sampling, and purposive sampling techniques were used to select 172 respondents. The study used questionnaires and interview schedule as instruments of data collection. Pilot study was undertaken to ensure validity and reliability of the data collection tool calculated by use of Spearman-Brown Prophecy formula giving a reliability coefficient of 0.86. Data was analyzed qualitatively through content analysis. Quantitative data was first coded then analyzed using Statistical Package for Social Sciences (SPSS) Version 17.0. Data was presented in tables using frequencies and percentages. The findings are that in Bondo sub county, the mean score for the patient factors influencing quality retention of clients on ART was $\chi = 3.79$, Social factors ($\chi = 3.97$), drug factors ($\chi = 4.27$), economic factors ($\chi = 3.80$) and health system factors ($\chi = 4.13$). This study concludes that a large proportion of patients initiating ART are poorly retained in care because of patient, social, drug, economic and health system factors. The study explicitly recommends that in order to improve retention, there is huge need to invest in reviewing health education content for specific sub populations, increase knowledge and conversation on retention strategies amongst implementing partners embedded in a personalized CQI approach to mentorship in retention of clients on ART to be scaled up. Stakeholders therefore need to address the cost quality of retaining patients on care or come up with affirmative action to cushion quality of care that on the lowest lead to deaths and lost to follow up as evidenced that shortage of health personnel at the facility is among the drivers of poor retention of patients in care at ($\chi = 4.45$)

Areas for further research work will include a study on; Impact of NGOs on quality retention in care of patients on antiretroviral treatment, Significance of quality retention in care of patients on antiretroviral treatment to County Government leadership in resources limited settings. This will highlight the issues underlying the challenges of retention in care of patients on antiretroviral treatment and support evidence based and informed decision making in Counties.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

UNAIDS (2012) indicates that the HIV/AIDS affects the most productive segments of the populations. Globally, “an estimated 36.9 million people were living with HIV (PLWHA) by the end of 2014 (WHO 2015). Out of these, 2 million people were newly infected with HIV in 2014 (WHO, 2015). The sub-Saharan African region remains most affected, with 25.8 million living with HIV and accounting for almost 70% of the global total of new HIV infections” (WHO, 2015). Stigmatisation from the community, teachers and peers is the biggest problem facing the adolescents living with HIV and AIDS.

According to UNAIDS, (2012), a dramatic change has been witnessed in the global HIV/AIDS programming because of expanded attentiveness to care, treatment and expected support. It was remarked that as at the end of 2014, it was estimated that 14.9 million PLWHA had access to antiretroviral treatment worldwide, of which “13.5 million were receiving antiretroviral treatment (ART) in low- and middle-income states (WHO, 2015)”. During the 2014 world AIDS conference, UNAIDS launched an initiative called the ‘90-90-90’ initiative with the prospective to end the pandemic by 2030 (UNAIDS, 2014). This means that “90% of all people living with HIV should know their HIV status, 90% of all people with diagnosed HIV infection should receive antiretroviral treatment and 90% of those on ART should be retained in care and virally suppressed”. Kenya aims to achieve these global targets through “scale up of HIV prevention care and treatment” interventions as spelt out in the KASF 2014/15- 2018/19.

Kenya is ranked fourth globally in HIV pandemic with 1.6 million people infected. Women represent 50 % of all adult persons living with HIV globally. However, in Sub-Saharan Africa, 59 % of PLWHA are women (UNAIDS, 2014). According to Kenya HIV Estimates, NACC, NASCOP, UNAIDS, 2015; Siaya has high incidence rate equal to or above the national average 0.27(27%).

Siaya County prevalence rate still remains high at 24.8 % (UN HIV Estimates 2016).It is ranked 2nd as per Official data but recent studies by CDC, Kemri and the Ministry of Health suggested this could be lower. “These discrepancies suggest the need to review the HIV estimates at county level because they might be too high,” Prevalence is higher among the females at 26.4% compared to males at 22.8%.The estimated number of people living with HIV virus (PLHIV) in the county stands at 126,411 of which over 75,000 have been identified and are on ART (Overall ART coverage of 65%, with adults at 68% and children at 52% (UNAIDS Estimates 2016).New HIV Infections have reduced two fold from 16,212 to 8,496 between the year 2014 and 2016 (UNAIDS estimates)

According to a report released in London by the US Centre for Disease Control and Prevention (CDC) and Kenya Medical Research Institute (Kemri) in April 2018, new infections in Siaya have dropped by more than a half since 2011.It also says, the number of individuals on ART increased from 2,096 in 2006 to 70,261 in 2016 (Sewankambo, N. K. 2018)

Despite the proven and documented benefits of ART (WHO, 2015; Franziska, 2011), retention of patients in most antiretroviral treatment programs continues to be one of the biggest challenges. “A number of people living with HIV are lost at different times in the continuum of care”. Many studies have shown that the “proportions of patients that remain in care following ART initiation are low and retention in care” (Mukumbang et al 2018) remains a challenge in many countries with a high burden of HIV/AIDS (Franziska, 2011; Bucciardini et al., 2015). “A review of 33 patient cohorts taking ART in 13 African countries suggested only 60% of patients remain in ART programs after two years with lost to follow up accounting for 56% of all attrition” (Fox & Rosen, 2010).

The current ART treatment guidelines support individuals with HIV disease to be initiated on ART immediately after they are diagnosed with HIV (Ministry of Health Kenya, 2016). This helps to explain how robust health responsive systems improvements can lead to better health choices, reduce poverty, and make “donor investment in health sustainable” (Buckley et al,2014)

1.2 Statement of the Problem

Research in health care has shown that antiretroviral therapy reduces death and HIV infection. The introduction of ART and its scale up has led to the improvement of quality of life of PLWHA in Kenya. Studies have manifested that people living with HIV who start treatment early, when their immune systems are relatively healthy, greatly reduce the risk of HIV transmission and the occurrence of opportunistic infections.

The projected gap now is to create a robust and seamless retention systems so that the gains of early prevention care and treatment can be fully realized in time. Patients who are initiated on ART do not adhere to treatment or remain in care. Evidence shows that more than 50% of patients discontinue treatment as a result of death or lost to follow up (Scott et al, 2014). A systematic review of PLWHA retention rates in “antiretroviral therapy programmes in Sub-Saharan Africa” (Rosen et al. 2007) reported a mean retention rate of 77.5% at the end of 12 months. About 33,000 people still died of AIDS-related illnesses in Kenya by 2014. Most of these deaths occurred due to treatment failure associated with non-adherence. About 2,728 adults and 992 children in Siaya County succumbed to AIDS-related illnesses during the year 2013 despite being initiated on ART (NACC and NASCOP (2014). Siaya County crude death rate according to the Siaya County civil registrar of births and deaths, reflects that 6,908 people died in 2014, 7,165 in 2015, 6,725 in 2016, and 6,366 in 2017.

Social factors such as stigma act as a barrier to ART as infected persons feel ashamed to seek treatment (Krain and Fitz, 2005). Religious beliefs contributes to PLWHA’s non-adherence to ART. Retention, though recognized as a prerequisite for achieving any level of adherence, has received less attention. Retention in care of patients on ART programme is of public health importance (Mukumbang et al 2018). Bondo Sub County is a low-resource setting region in Nyanza, Kenya. Quality retention in care of patients on ART in rural areas have been poorly documented in this region. “Rapid changes in HIV treatment guidelines and antiretroviral therapy drug safety data add to the increasing complexity of caring for HIV-infected patients and amplify the need for continuous quality monitoring of retention strategies and systems”. Therefore, a better

understanding of the influence of Health Belief Model on quality retention in care of patients on ART programme in Kenya is needed in this test and treat era.

According to Kenya HIV Estimates by NACC and NASCOP, UNAIDS (2015), Siaya has high incidence rate that is equal to or above the national average 0.27.

Adherence to medication and retention strategies should focus on patient, social, drug and economic factors as intertwined dimensions that in combination lead to better retention rates of patients on ART treatment that form the basis of this study. This is in line with Kenya HIV Prevention Revolution Road Map (2014) whose key elements is forecasting and tracking progress while emphasizing on monitoring outcomes contrary to processes. It anticipates unfolding technologies, aims to elevate research uptake demarcating both national and cluster- specific latest research priorities.

This study therefore seeks to answer the question “Do patient, social, drug, economic or health system factors in combination influence the quality retention in care of patients on antiretroviral treatment?”

1.3 Purpose of the Study

The purpose of this study was to establish the influence of Health Belief Model on quality retention in care of patients on ART in Bondo Sub County; Siaya County, Kenya

1.4 Research Objectives

The study was guided by the following objectives:

- 1 To assess the patient factors that influence quality retention in care of patients on antiretroviral treatment.
- 2 To determine the social factors that influence quality retention in care of patients on ART.
- 3 To establish the influence of drug factors on quality retention in care of patients on ART.
- 4 To determine the influence of economic factors on quality retention in care of patients on ART.

- 5 To assess the moderating influence of health system factors on the quality retention in care of patients on ART.

1.5 Research Questions of the study

The study was guided by the following research questions:

1. Do the patient factors influence quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya?
2. To what extent do social factors influence quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya?
3. What are the various drug factors that influence quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya?
4. How do economic factors influence quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya?
5. To what extent is the moderating influence of health system factors on quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya.

1.6 Significance of the Study

This study may be important not only to the Ministry of Health (NASCO & NACC), but also to Nyanza and Western regions HIV/AIDS key stakeholders specifically PLWHAs. It may help them understand quality retention in care critical aspects in implementation of quality, sustainable and comprehensive HIV Prevention, Care and Treatment services. This study is necessary as it contributes vital information that builds on the global body of knowledge required to implement retention strategies aimed at reducing the deaths associated with HIV and especially among PLWHA already enrolled on ART hence improving retention in care.

It may also help management of PLWHA who require long-term follow-up which includes advanced laboratory, pharmaceutical, and data services. This may contribute towards achieving the desired outcomes from service expansion which require continuous

investments in retention. It may thus respond to existing and potential gaps in the quality of services and outcomes of the national HIV response.

In addition, the findings may also be useful to mentors from various HIV/AIDS and TB donor supported programmes and projects, healthcare providers and county governments. Finally, this study may be of value to researchers and scholars as it forms a basis for further research.

1.7 Basic assumptions of the Study

This study assumed that respondents would be available to participate in the study and that they may answer questions truthfully at their various stations of work. It also assumed that the respondents had basic knowledge on the influence of Health Belief Model on quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya

1.8 Limitations of the Study

Given that the study was conducted in Bondo Sub County, Siaya County, the outcome of the study can vary elsewhere given the differences in geographical location, socio-economic status, political inclination, residents' perceptions, ideological orientation, cultural factors and literacy levels. The researcher anticipated great suspicion among the respondents on the intention of the study. To counter this limitation, a copy of research permit was produced and the intention of the study clearly explained. All questionnaires were cross checked to ensure that respondents answered appropriately before collecting them back for analysis.

1.9 Delimitations of the Study

The study was conducted in Bondo Sub County which has high Ward HIV Positivity in ANC, Siaya County (19.3%-30.2%) compared to counties like Kitui, Makueni and Nyeri hence saving on time and expenses. In addition, health facilities' employees were deemed to have relevant information on the influence of Health Belief Model on quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County due to

the nature of their duties and responsibilities . Data collection and analysis was allocated adequate time to enable respondents internalize the questions.

Finally, one research assistant was recruited to assist in the distribution of questionnaires and gathering of information making the study manageable.

1.10 Definition of Significant terms used in the study

The following terms were used in the study:

Adherence: Adherence is the word used to describe how faithfully a person sticks to his/her care and treatment plan especially correct and timely dosing of prescribed medication by the health care provider.

ART- The administration of ARVs, prophylaxis and treatment of opportunistic infections, nutrition and counselling.

Antiretroviral (ARVs) - Drugs taken to suppress the function of HIV virus in the body.

Combination HIV prevention refers to a “combination of behavioral, biomedical and structural approaches to HIV prevention to achieve maximum impact on reducing HIV transmission and acquisition”.

Drug factors: Refer to the “selection of specific antiretroviral regimes that may increase or decrease the likelihood of HIV drug resistance, with different types of drugs and drug classes having varying genetic barriers to resistance”.

Economic factors: economic factors that are related to the spread of HIV/AIDS.eg fish for sex, HIV/AIDS insurance provision coverage, sexual work etc.

Health belief model: This is a “psychological model that attempts to explain and predict health behaviors” in regard to patient, social, drug, economic and health system with lenses on the attitudes and beliefs of individuals.

Health system: A system that delivers quality services to all PLWHAs, when and where they need them but in all occasions need a robust financing system; a well-trained and

adequately remunerated workforce; well-founded information on which to base decisions and policies; well-maintained institutions and logistics to deliver quality medicines and technologies.

Patient factors: Reason for patient's actions, desires, and needs. What prompts him/her to act in a certain way, or at least develop an inclination for specific behavior. This may result from "lack of understanding of HIV, treatment and the implications of stopping medication, having to take a lot of pills and frequently, being forgetful, and depression, substance or alcohol abuse".

Partner: a non-profit organization that functions independently of any government, and purposely aims to address a social or public health concern in the care programme

Quality: the degree of excellence of something.

Retention: Retention in care refers to keeping (or "retaining") clients in the care programme. In this case, that means that all PLWHA continue with lifelong HIV care and treatment services. It also involves the capability to adhere to "critical aspects of care, such as attending regular follow up appointments, scheduled laboratory tests and other monitoring activities as prescribed by the health care provider".

Social support – Support systems available to PLWHA including treatment supporters or buddies, support groups, direct observed therapy, multi disciplinary teams.

Sustainable: able to be maintained at a certain rate or level.

Treatment failure: the current "WHO virological criterion for treatment failure is 1000 copies per ml or more"

Viral suppression: Refers to a "viral load below the detection threshold using viral assays".

Viral failure: refers to the "inability to achieve or maintain viral suppression below a certain threshold".

1.11 Organization of the study

This study was organized into five chapters. Chapter One covered the background of the study, statement of the problem, objectives of the study, research questions, purpose of the study, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study and definition of significant terms. Chapter Two dealt with literature review. The themes were arranged in relation to the research objectives and the quality retention in care of patients on antiretroviral treatment. Finally; Chapter 2 included the theoretical framework and the conceptual framework of the study.

Chapter Three described the research methodology used. Similarly I included; the research design, target population, sample size and sampling procedures, data collection instruments, data collection procedures and data analysis techniques. Chapter Four analyzed, presented and interpreted the research findings. Data was presented in form of tables.

Lastly, Chapter Five consisted of summary of the findings, discussions, conclusions, and recommendations of the study. This chapter ends with suggestions of areas for further research and contribution to the body of knowledge in its entirety.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented relevant literature on quality retention in care of patients on antiretroviral treatment. It sought to document the factors associated with quality retention in care of patients on antiretroviral treatment under the following subtopics; patient factors and quality retention in care of patients on ART, social factors and quality retention in care of patients on ART, drug factors and quality retention in care of patients on ART, economic factors and quality retention in care of patients on ART, health system factors and quality retention in care of patients on ART and gaps in literature review. The chapter also provided a theoretical framework and a conceptual framework of the study.

2.2 Quality Retention in Care of patients on Antiretroviral Treatment

In Kenya, supporting clients to initiate ART is critical, retention in care and adherence to effective treatment is required to achieve viral suppression. Retention data from many countries demonstrate that ART programmes globally face substantial challenges in maintaining clients on ART with viral suppression. Data from sites “where differentiated ART delivery has been adopted highlight that such interventions can be part of improving retention and adherence and achieving the second and third “90” outlined in the UNAIDS global targets”.(Fox et al., 2018)

Given that “HIV is a chronic, life-long condition, some clients will experience episodes of “instability”, which need to be addressed. As a result, they may need to be up referred to the standard of care or require additional interventions (counselling and repeat viral load) for a short intensive period”. (Fox et al., 2018)

Differentiating care provides “ART delivery in a way that acknowledges specific barriers identified by clients and empowers them to manage their disease with the support of the health system. WHO highlights the need for client-centred care to improve the quality of HIV care and treatment services” (Fox et al., 2018)

Each sub-population will require a unique and comprehensive package of health care services to overcome particular challenges. Having “specified refill days or times for certain sub-populations, where appropriate, may be one such innovation that will allow clinicians and counsellors to focus on the specific medical and psychosocial needs of this population and retention data for specific sub-populations. It is also important to know if facilities have an appointment and tracing system since resources are scarce by supporting stable clients to have fewer and less intense interactions with the health system”.

As of March 2015, “more than 50% of the district ART cohort (more than 15,000 clients) were enrolled in this strategy. Retention for those enrolled in the fast-track system was 97% at the 12-month follow up. In South Africa, the National Adherence Guidelines outline “spaced and fast lane appointments” as a repeat prescription collection strategy” (Fox et al., 2018)

Similarly in Uganda during 2015, 70% of TASO clients (about 50,000) received their ART within this model, with 89% retained after five years. In a sample of 870 CDDP clients, 87% had an undetectable viral load (Ssali et al., 2014)

2.3 Patient factors and Quality Retention in Care of patients on ART

Patient related factors comprise of personal characteristics such as perceived quality of life, side effects of the drugs, interpretation of illness and wellness after registering some improvements. ART can cause side effects just like any other drugs. Most patients who take ART, experience some side effects at one point. Some people may experience them and some may not. Van Dyk (2011) agree that most drugs that are used to manage HIV will have side effects ranging from mild to serious. According to Roural et al. (2009) these side effects in turn may affect patient seeking behavior and actions and may lead to attrition from ART care. Patients feel that side effects are detrimental to their health and well being and interfere with their participation in livelihood activities (Musheke et al., 2012). and a study on “Predictors of poor retention on antiretroviral therapy as a major HIV drug resistance early warning indicator in Cameroon” (Marrone 2016) whose results on countrywide, “retention on ART at 12 months was 60.4% (2023/3349); only six sites and one region attained satisfactory performances”.

Patient interpretation of wellness can lead to “lack of self-efficacy resulting in patient attrition from ART care”. Mugisha et al. (2009) reported a poor sense of self-efficacy among patients receiving ART treatment to have led to discontinuation of treatment. Musheke et al. (2012) argue that a sense of wellbeing in patients receiving antiretroviral treatment decreases motivation to continue on treatment. There is need for intensive counseling at each follow up visit in order to improve retention in care. This too is backed up by a study on “The Role of Gender in Patient-Provider Relationships: A Qualitative Analysis of HIV Care Providers in Western Kenya with Implications for Retention in Care” (Wachira 2018).

Furthermore patient level of independence is likely to increase their health seeking behaviour. There is also “some evidence that engagement in patient education programs is not spread evenly across socio economic groups. The first is health literacy, which is the ability to seek, understand and act on processes of imparting health information. Although health literacy involves an individual’s competencies, the health system has a primary responsibility in setting the parameters of the health interaction and the style, content and mode of information. Secondly, much patient education work has centered on factors such as attitudes and beliefs to better patient needs. That small alterations in physical settings can have huge effects on behavior and can be used in self-management and long term disease research chronic in nature”. Choice architecture necessitates “reconfiguring the context or physical environment in a method that makes it more likely that humanity will choose certain behaviors”. Thirdly, better mechanisms of evaluating the impact of programs on public health is critically necessary (Adams 2014)

2.4 Social factors and Quality of Retention in Care of patients on ART

The Kenya AIDS strategic framework for the period 2014/2015-2018/2019 aims to “reduce new infections by 75 %, AIDS-related deaths by 25 % and stigma and discrimination by 50 % by 2019”.

Evidence shows that programs that “support people on ART in resource-limited settings with home visits or home-based care appear to have a significantly lower percentage of loss to follow-up from care than when ART is primarily facility-based” (Decroo et al.,

2013). In other words, there are huge gains by “supporting people on ART as close as possible to their homes”. The challenge with this approach is it sustainable?

Oturu (2013) posits that stigma processes do not take place in a contextual vacuum; they are influenced by the wider super-structural, structural, environmental and individual factors. A cross-sectional study which explored non-adherence factors among 221 adult PLWHA attending an ART clinic in Nigeria found that 31.9% of the respondents failed to adhere to ART due to AIDS-related stigma (Ijeoma et al., 2013).

Social factors that influence quality of retention in care include poor social support, relationships with marital partners, members of family, or peers including stigma. These in turn “affect individual behavior and actions” (Roura et al., 2009). PLWHA avoid disclosing their HIV status to their spouses, social network or other family members for fear of marriage breakdown, rejection, discrimination and loss of employment. “When social support is endangered by involuntary disclosure of HIV status, individuals abandon treatment as a protective mechanism” (Musheke et al., 2012).

HIV and AIDS related stigma is a serious obstacle to long term patient retention. It can be at individual, household and community levels and it is characterized by rejection, denial and social distance (Musheke et al., 2012). “Many people still associate HIV/AIDS with moral decadence and promiscuity, substantially passing moral judgment on those infected. As a result, PLWHA may face resentment, isolation and ridicule”. Roura et al. (2009) argue that such “attitudes and behavior do not only infringe on the rights of people living with HIV to respect and dignity but they also act as a strong deterrent for them to make use of any existing services due to perturbation of being given names”. This eventually leads to discontinuation of ART. A study from Malawi shows that stigma leads to non-retention in up to 25% of patients on ART (McGuire et al., 2010). If universal access to treatment is to be attained, effectual strategies addressing stigma and discrimination must be developed. Stronger profound community engagement in the process of stigma analysis and development of responses is recommended.

“After a baby boy is born, we count up to 7 days and on the eighth day, the baby is circumcised as indicated in Luke 2:21,” says Obore (2013). According to doctrines of

Nomiya church, the mother is kept in seclusion for a period of 40 days after giving birth to a boy. For a girl, the woman stays in seclusion for 80 days. “Our church doctrines demand that we keep a woman in seclusion for about 40 days if she gives birth to a baby boy and 80 days if it is a girl. This therefore gives her enough time to heal after giving birth,” explains Obore (2013). In conventional ceremonies, the cut is voluntary and is performed by qualified medical staff. But in the Nomiya Church, Obore says, only those inspired by the Holy Spirit can perform the ritual. “Just like the hospitals where qualified personnel perform the cut, we also have specific people that would be inspired by the Holy Spirit to circumcise. And the person who is allowed to perform this is called a Sharif,” says Obore. “Since this is a very delicate and involving process, not so many can perform it and we therefore have one Sharif in the entire Siaya County,” he says. Daniel Omondi, a member of Nomiya Church, says when one wants his son circumcised, they have to report the matter to the church elders. Thereafter, the Sharif is contacted. He will then pray over it having been inspired by the Holy Spirit. For example, the church allows polygamy, with men allowed to marry as many as 20 wives. It also prides itself as the first independent religious institution in Kenya that accepts wife inheritance (Gwengi 2013)

2.5 Drug factors and Quality Retention in Care of patients on ART

Neurocognitive impairment is an “ordinary feature of HIV/AIDS disease. However the incidence of the most severe form of HIV Associated Neurocognitive Disorders (HAND), HIV associated dementia (HAD), has decreased with the use of potent antiretroviral medications, recent estimates indicate that nearly 50% of patients treated with ART for prolonged periods continue to experience neurocognitive impairment” . This thus primarily necessitates looking at issues of drug resistance, correct dosing by ensuring patients adhere to prescriptions and checking their storage of drugs. Cognitive deficits associated with “HIV infection disrupt fronto-striatal circuits which are responsible for working memory, information processing speed and other higher order cognitive functions requiring organization, planning and sequencing. The very cognitive skills disrupted in HIV infection are the same needed for appointment making and keeping”.

Moreover, various studies reveal the shared interconnectivity of cognitive to health literacy skills, further emphasizing the need to re-evaluate and assess health behaviors correlated to these mentioned common tenets and constructs. Particularly, in a “chronic disease such as HIV/AIDS with a substantial prevalence of neuro-cognitive impairment”, which prompts the need to assess cognitive to better understand and tailor make health literacy in different settings.

2.6 Economic factors and Quality of Retention in Care of patients on ART

Although the governments of most African countries are making efforts towards scaling up ART programs to benefit people living with HIV, factors such as cost of drugs leading to stock outs are contributing to low retention rates in ART programs. Supply chain management problems leading to frequent stock outs of ARVs are hindering access to ART services (WHO, 2009).

The planned initiation of a “National Health based Insurance Fund cover for PLWHA is long awaited news especially to their families. If implemented, it will ease access to vital medication and enable those infected to drastically lower opportunistic illnesses, thus improving the quality of their lives. Accordingly the National HIV and Aids Estimates report, Sh1.75 trillion will be needed to prevent and curb 1.5 million new infections by 2030. The coverage ceiling varies by various insurance providers. Four of the insurers interviewed in Kenya (Jubilee, Madison, Pacis, and Pioneer) affirmed that they conducted actuarial analyses to calculate projected premiums that cover HIV/AIDS benefits. In Uganda, the four insurance companies surveyed all provide coverage for HIV and AIDS” (Katusiime, 2011; Kigonya, 2012; Kirraga, 2011; Korukundo, 2011)

With the number of patients “being initiated on treatment rapidly growing and a median price for first-line treatment of US\$200-250 per person per year in low-income countries, many robust health systems are finding it difficult to ensure that there are sufficient drugs and other supplies” (WHO, 2009). These countries are often undermined by “weak procurement and supply management systems, resulting in frequent shortages of ARVs and other essential commodities. Evidence shows that 34% of 91 low- and middle-income countries have experienced at least one stock out of a required ARV drug” (WHO, 2009).

The presence of widespread poverty and food insecurity at household level may affect long-term retention of patients on ART treatment (Weiser et al., 2010). Taking ART in circumstances of high food insecurity and lack of finances may also increase the chances for absence from the clinical appointments and may compromise retention in care (Boyles et al., 2011). This is because some patients are forced to choose between paying transport costs to attend the ART clinic and using the money for food (Tuller et al., 2010). This is demonstrative of the implications of substantial threat to adherence but also increases the chances of loss to follow up.

Lack of formal education and inadequate health literacy about ART and HIV/AIDS can make patients not to understand about the effectiveness of medications. This may lead to challenges in adhering to treatment and poor retention in care (Tuller et al., 2010). At the initiation of ART, patients receive the most intensive counseling. However, once they are on treatment, counseling becomes less intensive unless there is a problem. Adherence counseling should be provided whenever patients visit the clinic for medication refills or any clinical appointments because this is the time when any other health problems can be identified (Reda & Biadgilign, 2012). However, if good retention rates in ART programs are to be attained, information, education, and counseling need to be emphasized.

2.7 Health system factors and Quality Retention in Care of patients on ART

Structural barriers to retaining clients in care may include poor access to health facilities due to long distance to the health facility. A study in Uganda reports that long distances to ART centers were considered serious obstacles to care and led to poor retention of patients on ART program (Tuller et al., 2010). “Making ART available at more sites that are convenient could address some of the challenges related to loss to follow-up. Studies have suggested that retention on ART care is better at primary healthcare sites within the heavily affected communities than at large centralized hospitals” (Tuller et al., 2010). According to Boyles et al. (2011), making ART available at most local clinics in the community would make ART more accessible to patients. However, “traditional efforts

aimed at strengthening knowledge and skills often are not successful at improving gaps in the key health systems required for sustaining high quality care” (Cosimi et al 2015)

Shortage of health personnel at the facility is among the drivers of poor retention of patients in care. Many public health facilities and related institutions in “sub-Saharan Africa scaled up ART without a comparable increase in personnel to accommodate the larger number of patients” (Lambdin et al., 2011). The shortage of human resource for health has severely hampered the rollout of ART in Sub-Saharan Africa (Callaghan, Ford and Schneider, 2010). According to Callaghan, Ford and Schneider (2010), task shifting should be considered for careful implementation if we are to offer high-quality, cost-effective care and retain more patients in care.

Shortage of health personnel places considerable pressure on the scarce medical workforce (Decroo et al., 2013). This may result in long waiting times for patients at the facility and compromise quality due to burn out. As a result, patients may be frustrated and discouraged from seeking care, leading to poor retention in care of the patients (Callaghan, Ford & Schneider, 2010).

High patient loads at health facilities also lead to long waiting times which is among the key drivers of attrition for patients on ART. According to Alamo et al., (2013), high patient load at health facilities may also result in long clinic appointments, long waiting times often lasting almost the whole day, poor staff attitudes and decreased quality of patient-provider interaction as well as overall patient dissatisfaction in their HIV care. These can lead to frustrations with most patients not returning to the clinic especially patients in employment.

Workload Indicators of Staffing Needs (WISN), developed by the WHO (Namaganda et al 2015) “includes activities done by common cadres, the annual workload, time taken to do particular activities, available working time, and associated activities that are not core to the job description of a person. WISN takes into account the indigenous epidemiology and specific sets of services; therefore, its results are precise and more useful for planning and policy implementation. WISN carried out to assess health worker requirements in

Indonesia, India, Bukina Faso, Namibia, Mozambique, and Uganda have illustrated staffing excesses, shortages, or adequacy”. Additionally, “in resource-limited countries increasingly depend on quality indicators to improve outcomes within HIV treatment programs, but indicators of program performance suitable for use at the local program level remain underdeveloped especially process indicators”(Ahonkhai et al. 2012)

All of the insurance firms “surveyed in Kenya and Uganda mentioned that, as the cost of treatment has fallen, the perception of risk associated with covering PLWHA has decreased. Insurers mentioned that actuarial analysis indicates that other conditions, such as cancer, are far costlier to insurance firms than ART. One study in South Africa found that when the cost of highly active ART was reduced by 40 percent, it was more cost-effective to treat patients at all CD4 thresholds than to not treat them at all” (Badri, 2005).

2.8 Theoretical Framework

The theoretical framework is based on the Health Belief Model (HBM) which “is a psychological model in nature that attempts to explain, visualize and predict health behaviors. This is done by focusing on the attitudes and beliefs of individuals. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S. Public Health Services. The model was developed in response to the failure of a free tuberculosis (TB) health screening program. Since then, the HBM has been adapted to explore a variety of long- and short-term health behaviors, including sexual risk behaviors and the transmission of HIV/AIDS”. In terms of application to this study model was used to predict the factors influencing quality of retention of clients on ART.

The “underlying concept of the HBM is that behaviour is determined by personal beliefs or perceptions about a disease and the strategies available”

The “HBM is based on the understanding that a person will take a health-related action (i.e., use condoms) if that person”:

- a) “feels that a negative health condition (i.e., HIV) can be avoided”,

- b) “has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition (i.e., using condoms will be effective at preventing HIV)”, and
- c) “Believes that he/she can successfully take a recommended health action (i.e., he/she can use condoms comfortably and with confidence)”.

The “HBM was spelled out in terms of four constructs representing the perceived threat and net benefits: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers”. These concepts were proposed as accounting for people's "readiness to act." “An added concept, cues to action, would activate that readiness and stimulate overt behavior”. “A recent addition to the HBM is the concept of self-efficacy, or one's confidence in the ability to successfully perform an action. This concept was added by Rosenstock and others in 1988 to help the HBM better fit the challenges of changing habitual unhealthy behaviors, such as being sedentary, smoking, or overeating”.

2.9 Conceptual Framework

The conceptual framework presents the relationship between the study variables as shown in Figure 2.

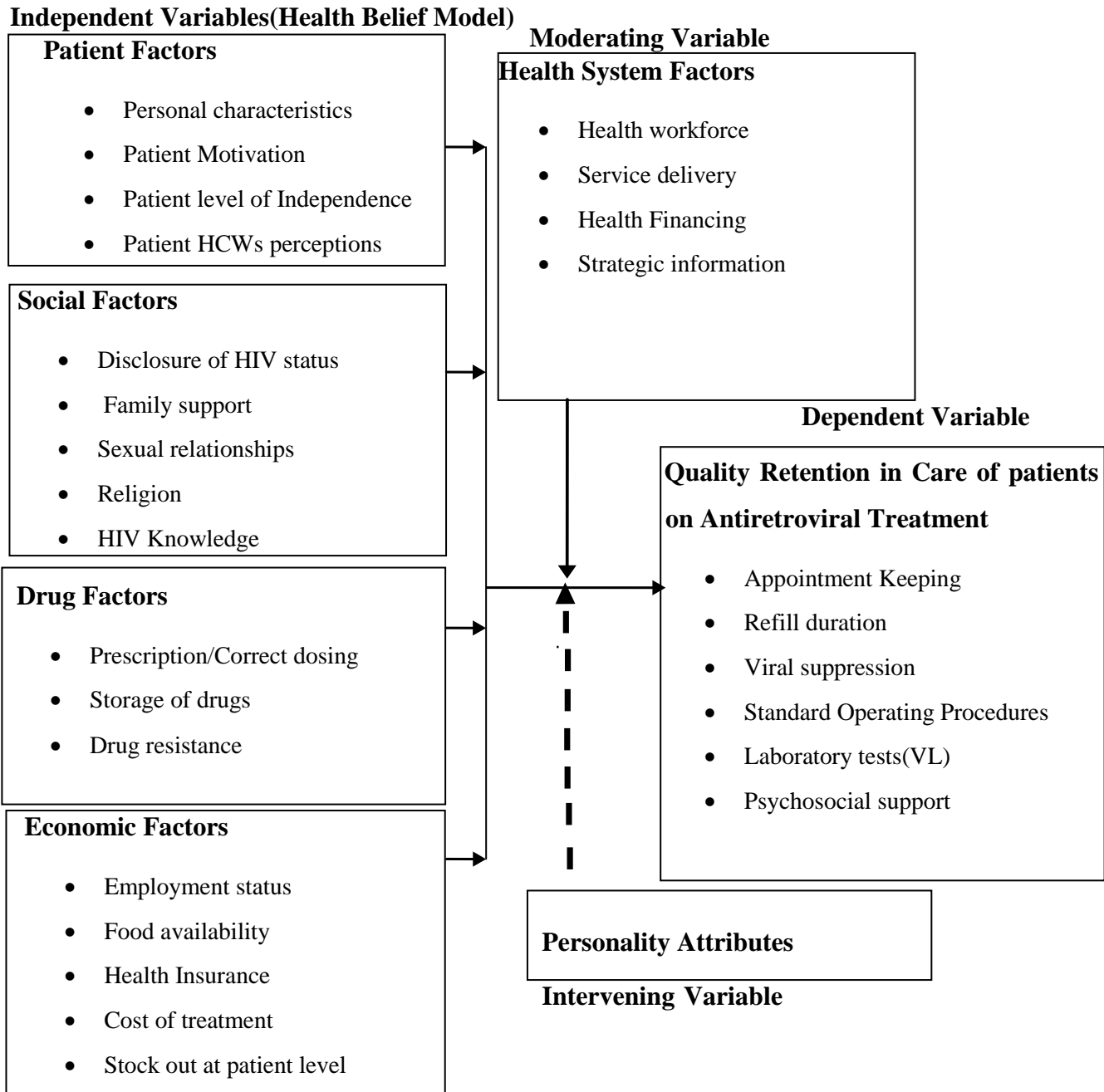


Figure 1: Conceptual Framework on the influence of HBM on quality of retention on ART.

The conceptual framework shows that the implementation of quality retention in care of patients on antiretroviral treatment in Bondo Sub County would require critical analysis at, patient, social, drug and economic factors which are affected by specific moderating influence of health systems factors in different communities. If quality retention in care of ART patients is to be achieved then service expansion in retention activities through continuous investment both in retention and quality improvement at all levels of health system is needed. It will thus respond to existing and potential gaps in the quality of retention activities and services resulting to better outcomes of the national HIV response. Moreover, investing in retention systems with integrated CQI approach to mentorship in specific retention activities in care of patients aims to help the County in collaboration with “National government decision makers assess the rapidly changing social and economic situation in developing countries and its implications for effective development assistance. This will help to explain how health systems improvements can lead to better health, reduce poverty, and make donor investment in health sustainable”(Buckley, 2014)

2.10 Gaps in Literature Review

The literature reviewed showed that quality retention to care involves a reorganization of systems, processes, structures, policies and resource because existing systems, procedures and routines may not be responsive to changes. Despite this, gaps were noted in the literature of some authors. For instance, (Ahonkhai et al. 2012) posits that “resource-limited countries increasingly depend on quality indicators to improve outcomes within HIV treatment programs, but indicators of programme performance suitable for use at the local programme level remain underdeveloped especially process indicators”. However, traditional efforts aimed at strengthening knowledge and skills often are not successful at improving gaps in the key health systems required for sustaining high quality care (Cosimi et al 2015)

Patient interpretation of wellness can lead to lack of “self-efficacy resulting in patient attrition from ART care”. Mugisha et al. (2009) reported a poor sense of self-efficacy among patients receiving ART treatment to have led to discontinuation of treatment. Musheke et al. (2012) argue that a sense of wellbeing in patients receiving antiretroviral

treatment decreases motivation to continue on treatment. There is need for ongoing intensive counseling at each follow up visit in order to improve retention in care.

The development of the “DOTS Expansion Plan has been a milestone in tuberculosis (TB) control at the global and national levels. Key challenges that remain are overcoming the weakness of a strategy built on case management, sustaining commitment, competing priorities, the threat of HIV, maintaining high quality of care and preventing drug resistance, building human resource capacity, improving diagnosis and fostering operations research. The ability to address these challenges will determine the success or failure of the Global Plan to Stop TB, 2006–2015” (Enarson, etal 2007)

In Summary, many authors have expressed their concern for continuous quality improvement based on the literature review. The literature review has also brought to the limelight the fact that quality retention in care requires the participation of all institutions and not just the state. Finally, the conceptual framework linked the independent variables to the implementing quality of retention of patients on ART while the theoretical framework gave methods for implementing this approaches

Although the limited data suggests performance based financing “(PBF) positively affected HIV service access and quality, critical health system and governance knowledge gaps remain. More research is needed to inform national policymaking”. (Suthar, etal 2017).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed various stages that were followed in completing the study. It provided a general framework for the procedures and techniques used in data collection and analysis under the following sub-headings: the research design, target population, sampling size and sampling procedures, data collection instruments, data collection procedures, data analysis techniques and ethical considerations.

3.2 Research Design

This study adopted a descriptive research design that targets the AIDS & STI Control Programming in Siaya County through its structures. A descriptive study is one in which information is collected without changing the environment. It is also conducted to demonstrate relationships between variables and may involve interactions with people or surveys. The use of descriptive research design enabled this study to establish facts without manipulation of data. According to Gray (2004) descriptive design portrays an accurate profile of persons, events or situations by describing the existing conditions and attitudes through interpretation of techniques.

Orodho (2003) “defines a research design as the scheme, outline or plan that is used to generate answers to research problems”. According to Zikmund (2000), “descriptive design allows the researcher to gather information, summarize, present and interpret data”. This design is preferred because the questions raised in the study require collecting data through administration of questionnaires and interviewing the respondents and also it is effective when the study involves a large population. The design is appropriate because the researcher is able to examine variables under natural conditions in which they are operating as dependent and independent variables.

Cooper and Schindler (2006) further explain that a descriptive research design is one of the best since it is accurate and current facts are exhibited through data collection in human contexts. The study therefore considered descriptive research design which was

cross sectional in nature most appropriate in establishing the influence of Health Belief Model on quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya

3.3 Target Population

Target population is the specific population about which information is desired. Welman and Mitchell (2005) “define target population as a full set of cases from which a sample is taken”. The target population of this study included partner/MoH employees, peer educators and County government/MoH departmental heads in County government hospitals in Bondo Sub County; Siaya County.

The total population supported by both partners and County government is 300. These are the staff working in Bondo Sub County and dedicated in supporting HIV services. These cadres of staff were involved because they were expected to provide crucial information concerning the study. In total the study population was 300 staff.

Table 3.1: Target Population

Variable	Observable characteristics	Total Number	Percentage
Partner/MoH supported employees including(peer educators)	<ul style="list-style-type: none"> • Work in HFs with high HIV positivity • Region highly donor funded • Highly targeted/Performance based monitoring system • Participate in both HIV trainings and CMEs 	260	86.6
County government(MoH departmental heads)	<ul style="list-style-type: none"> • Strategic partnership • Team leads/Leadership 	40	13.3
Total		300	100

Mugenda and Mugenda (2003), “explain that the target population should have some observable characteristics, to which the study intends to generalize the results. This definition assumes that the population is not homogeneous”.

3.4 Sample Size and Sampling Procedure

The sampling plan “describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample is selected” (Cooper & Schindler, 2003). The sample consisted 172 of partner/MoH staff employees from the supported health facilities with HIV care and treatment services in Bondo Sub County; Siaya County. Oso et al. (2009) says, A sample is the target (or accessible) population that has been procedurally selected to represent it

3.4.1 Sample Size

According to Cooper and Schindler (2006), a “sample of at least 30 elements (respondents) must exist for generalization purposes”. Yamane (1967) provides a “formula for determining the sample size. This formula was used to determine the sample size”. Assumption: 95% confidence level $P = .5$;

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size required

N = number of people in the population = 300

e = error limit = 0.05 (the level of precision)

The formula generates a sample size of 172

3.4.2 Sampling Procedure

Purposive sampling was done for partner/MoH staffs since the respondents work in targeted comprehensive care clinics in Bondo Sub County. While simple random was used for the leadership of both Sub County and County government respondents that support HIV/AIDs and HIV Testing Services.

3.5 Data Collection Instruments

The study used questionnaire and interview schedule as instruments of data collection. Questionnaire were used to collect data from the partner/MOH supported staff while interview schedule was used to collect data from MoH department heads supporting HIV/AIDs and HIV Testing Services. Questionnaire were used because of its convenience in facilitating quick and easy derivation of information (Oso and Onen, 2009). Moreover, the target population was considered literate. This minimized the process of interpreting questions for their understanding to capture reliable information. Questionnaires were also profoundly useful since they establish the number of people who hold certain beliefs and hence possible to gauge public opinion on an issue (Flick, 2002).

The questionnaire consisted of closed ended and open ended questions for the study. The questionnaires had 5 sections that were sub-divided based on the research objectives except the first subsection (section A) that was meant to capture the background information of the participants like respondents' gender, marital status, age, working experience and level of education. Section B sought to assess patient factors that influence quality retention in care of patients on antiretroviral treatment (ART) and their understanding of HIV programming related issues. Section C included questions about social factors influencing quality retention in care of patients on ART. Section D also had the questions meant to establish whether the drug factors influence quality retention in Care of patients on ART. Section E also had the questions meant to determine the influence of economic factors on quality retention in care of patients on ART.

Finally, section F which had questions seeking to assess the extent of moderating influence of health system factors on quality retention in care of patients on ART. Likert scale was used in questions which tested on the degree of the respondents' agreement with particular variables of the study.

Interview schedule was used on the departmental heads due to their characteristic that they used to capture information that would otherwise not be captured using questionnaires. It was necessary to interview the MoH heads of department because they are deemed to

have information that the other employees might not have. The researcher made preliminary arrangements prior to the interview. This guarded against any weaknesses associated with this method.

3.5.1 Piloting of the Study

The pilot study among 30 samples was conducted in Bondo County Referral Hospital. For a pilot study to give adequate feedback, it should be carried out on at least 10% of the sample size (Lackey & Wingate, 1998). Piloting was done to assess the clarity, validity and reliability of the instruments and thus according to Gray (2004) a “correlation coefficient of 0.8 and above is high enough to judge the instruments as reliable for the study”.

3.6 Instrument Validity and Reliability

3.6.1 Validity of the Instruments

Questionnaires as an instrument of data collection should collect enough relevant information that shall help the researcher to answer their research questions. When properly constructed, questionnaire are fundamental instruments by which statements can be made about specific groups, sections if the population or entire population (Berge, 2009). Validity testing is the measure that helps a researcher to collect adequate, unbiased, sound, suitable, meaningful and relevant content that shall help them to answer the research questions and hence achieve their research objectives (Mukwanjeru, 2011).

Validity refers to “whether an instrument actually measures what it is supposed to measure (Hilla & Christa, 1996), given the context in which it is applied”. When invalid instruments are used to collect data, the inferences that the researcher comes up with will be less meaningful, useful and appropriate. Validity gives strength to prepositions, conclusions and inferences that the researcher will finally come up with. To ensure this end, the researcher issued the instruments to the supervisor, lecturers and colleagues who helped assess if the questions were clear, appropriate to the topic, appropriate for the

respondents, properly ordered and if the questionnaire was comprehensive enough to collect all the information required addressing the objectives and the purpose of the study. Content related validity was used to ascertain the validity of questionnaire. It was established through consulting an expert in the HIV field of research. A pilot test was important as it enhances the validity and reliability of the research instrument. A pilot test helped the researcher to ensure that the questions were clear, appropriate, necessary and sufficient to generate meaningful information (Suskie, 1996). The researcher thus conducted pilot test of data collection instrument which is the questionnaire

3.6.2 Reliability of the Instruments

Reliability refers to “the degree to which the instrument can be depended upon to yield consistent results” (Hilla & Christa, 1996). It is the “degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. A measure is considered reliable if a person scores the same if the same test is administered more than once”. It is worth noting that reliability is only estimated and not measured (Mustonen & Vehkalahti, 1997). Reliability indicates the accuracy or the precision of the measuring instrument. For the reliability of the questionnaire individuals with knowledge on research were asked to review and verify the interpretations of the questions in the questionnaire. The researcher rephrased the questions accordingly to reflect clarity. Further a pilot study (pretesting) was undertaken on a population with similar characteristics and similarly the questions were re-worded to reflect clarity. The researcher assessed the reliability of the responses by use of the split half method. The responses were coded. The average for each question was obtained. The responses were divided using odd numbers for one set and even numbers for the other set. The reliability coefficient was then calculated using the Sphearman-Brown Propheesy.

$$\text{Reliability of the Overall test} = \frac{2 \times \text{Reliability for } \frac{1}{2} \text{ Tests}}{1 + \text{Reliability for } \frac{1}{2} \text{ Tests}}$$

The coefficient of reliability was calculated to be 0.86. This is an acceptable level of correlation according to Dowdy and Wearden (1983)

3.7 Data Collection Procedure

Data collection started with the study researcher acquiring a letter of introduction from the Department of Open Learning. Thereafter a permit was then acquired from the National Commission of Science, Technology and Innovation (NACOSTI) before going to the field. The researcher made appointments with the selected departmental heads in order to get permission to carry out the study. After permission was granted, administration of the questionnaires began and took two weeks to complete the exercise. This was made possible through the help of one research assistant who was closely supervised by the researcher. The study used “drop and pick” method to administer the questionnaires to the sample population.

3.8 Data Analysis Techniques

Data coding was done to translate responses into specific customized categories and manageable summaries. Thereafter tabulation was done following robust analysis using descriptive statistics. Frequencies and percentages was used and the presentation made using tables. Regression analysis was done to establish the correlation and relationship between variables. The computer program Statistical Package for Social Science (SPSS) version 17.0 was used to analyze the data. Data analysis was important in explaining the variables of study. Data from the interview schedule was analyzed using content analysis. Durrheim and Painter (2006) points out that the purpose of data analysis is to derive meaning from the raw data collected.

3.9 Ethical Considerations

Ethical research practices was observed throughout the study. First, consent to carry out the research was sought from Hospital administrators. This helped in eliminating any kind of conflicts that might arose from the respondents. Secondly, the purpose of the study was clearly explained to the respondents. It was also made clear that the findings from the study would be treated with great confidentiality. A research permit was further obtained from the National Commission of Science, Technology and Innovation. It clarified the

aim of the study which will improve cooperation from the respondents. Finally, participation will be made voluntary.

3.10 Operational Definition of Variables

The different variable and how they will be applicable to the study are summarized as in Table 3.3;

Table 3.3: Operational Definition of Variables

Objectives	Variables	Indicators	Type of Data	Tools of analysis	Type of data Analysis
To establish the influence of Health Belief Model on quality retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya	Dependent Variable: Quality Retention in Care of patients on ART	<ul style="list-style-type: none"> • Appointment Keeping • Refill duration • Viral suppression • Standard Operating Procedures • Laboratory tests(VL) • Psychosocial support 	Ordinal	Mean Percentage	Descriptive

<p>To assess whether the patient factors influence quality retention in care of patients on antiretroviral treatment</p>	<p>Independent Variables: Patient factors</p>	<ul style="list-style-type: none"> • Personal characteristics • Patient Motivation • Patient level of Independence • Patient HCWs perceptions 	<p>Ordinal</p>	<p>Mean Percentage</p>	<p>Descriptive</p>
<p>To find out whether social factors influence quality retention in care of patients on antiretroviral treatment.</p>	<p>Social factors</p>	<ul style="list-style-type: none"> • Disclosure of HIV status • Family support • Sexual relationships • Religion • HIV Knowledge 	<p>Ordinal</p>	<p>Mean Percentage</p>	<p>Descriptive</p>
<p>To establish whether the drug factors influence quality retention in care of patients on antiretroviral treatment.</p>	<p>Drug factors</p>	<ul style="list-style-type: none"> • Prescription • Storage of drugs • Drug resistance 	<p>Ordinal</p>	<p>Mean Percentage</p>	<p>Descriptive</p>

<p>To determine influence of the economic factors on quality retention in care of patients on antiretroviral treatment.</p>	<p>Economic factors</p>	<ul style="list-style-type: none"> • Employment status • Food availability • Health Insurance • Cost of treatment • Stock out at patient level 	<p>Ordinal</p>	<p>Mean Percentage</p>	<p>Descriptive</p>
<p>To assess the Moderating influence of health system factors on the quality retention in care of patients on antiretroviral treatment.</p>	<p>Health system factors</p>	<ul style="list-style-type: none"> • Health workforce • Service delivery • Health Financing • Strategic information 	<p>Ordinal</p>	<p>Mean Percentage</p>	<p>Descriptive</p>

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the analyses and interpretation of the study findings and is arranged in the order of the research questions. The chapter is organized under the following key sub headings: the questionnaire return rate, demographic characteristics of the respondents, patient factors and quality retention in care of patients on ART, social factors and quality retention in care of patients on ART, drug factors and quality retention in care of patients on ART, economic factors and quality retention in care of patients on ART, health system factors and quality retention in care of patients on ART and chapter summary.

4.2 Questionnaire Return Rate

Questionnaire return rate refers to the proportion of the returned questionnaires in relation to distributed questionnaires. It is usually obtained by dividing the issued questionnaires with the sample size and is usually expressed in the form of a percentage (Berge, 2009). A low response rate introduces a non-response error which is defined as a sampling bias that occurs if the responses of the respondents differ from the potential answers from those who did not respond (Berge, 2009). Hence the higher the response rates the lower the chances of non-response bias occurring. Although various studies have suggested that lower response rates do not necessarily reduce representativeness of the sample, a response rate of over 80% is usually preferred (Dowdy & Wearden, 1983).

The findings on the response rate are shown in Table 4.1

Table 4.1 Questionnaire Return Rate

	Number of Questionnaires	
	Frequencies	Percentage
Questionnaires Distributed	172	100%
Questionnaires Returned	170	99%
Valid Response	165	96%
Questionnaires Unreturned	2	1%

The researcher distributed 172 (100%) questionnaires where 170 (99%) were returned and 2 (1%) of questionnaires were unreturned. Thereafter sorting was undertaken and the questionnaires that were not filled completely were discarded leaving the researcher with 165 (96%) of valid questionnaires. The researcher adopted some strategies to increase the response rate which included being available to address queries that were raised by the respondents and to collect the filled questionnaires. Research activity was carried out during afternoons and on weekends to improve on the response rate. The researcher also ensured that research assistant made close follow up to cushion the research process from non-response error by being keen to ensure follow up on the respondents and to ensure that issued questionnaires were collected. In cases where the respondents could fill the questionnaire immediately, the researcher and the research assistants collected the questionnaires immediately. This resulted in data collection taking three weeks.

4.3 Demographic Characteristics of the respondents

Demographic characteristics refer to the vital statistics of a sample and it is important in determining if the sample is representative of the population (Berge, 2009).

The study targeted the partner/MoH staff working in comprehensive care clinics in Bondo Sub County, Siaya County. The respondents thus were required to state the duration of service in the County. Data on demographics was important as it was useful in determining if the respondents were within the researchers sampling frame. They would also help in the analysis of the findings. The study's interests was the age, gender, marital status, and level of education of the respondents to ensure representation of varied views to meet the researcher's sampling criteria.

4.3.1 Distribution of the respondents by gender and age

The respondents in this study were 165. Their age and gender representation was as shown in the Table 4.2

Table 4.2 Gender and Age of the Respondents

Age Group	Males		Females		Total	
	<i>f</i>	<i>p</i> (%)	<i>f</i>	<i>p</i> (%)	<i>f</i>	<i>p</i> (%)
Below 18 Years	1	0.6%	0	0%	1	0.6%
19-26	14	8.5%	22	13.3%	36	21.8%
27-35	31	18.8%	49	29.7%	80	48.5%
36-45	13	7.9%	21	12.7%	34	20.6%
46-55	4	2.4%	7	4.2%	11	6.7%

Above 55 Years	1	0.6%	2	1.2%	3	1.8%%
Total	64	38.8%	101	61.1%	165	100%

f – Frequency *P* (%) – Percentage

Majority of the respondents were aged 27-35 at 48.5% followed by 19-26 at 21.8% and then 36-45 years at 20.6%). This age distribution represented the entire age group for the research. This implies that most of the supported staff are young and very productive.

4.4 Patient factors and Quality Retention in Care of Patients on ART

The study sought to assess the patient factors on quality retention in care of patients on ART. The patient factors were the age, gender, marital status, education level as well as the experience or knowledge in HIV services. The findings on these factors are as shown in Table 4.3

Table 4.3 Patient factors and Quality Retention in Care of Patients on ART

Personal characteristics	Frequency	Percentage
Age	136	18.68%
Gender	163	22.39%
Marital status	165	22.66%
Educational Level	123	16.90%
Experience or Knowledge in HIV Services	141	19.37%
TOTAL	728	100%

From Table 4.3, marital status had the greatest influence on quality of retention in care of ART clients at 22.66% followed by gender at 22.39%, then experience or knowledge in HIV services at 19.37%. Lastly both age and educational level came in at 18.68% and 16.90% respectively.

4.4.1 Practices contributing to quality retention of clients on ART.

The study sought to assess the patient practices that influence implementation strategies on quality retention of the ART clients. For instance, patient's level of motivation, patient level of independence as well as patient HCWs perceptions were presumed to be contributing to the retention of the patients. The findings on these practices is presented in Table 4.4.

Table 4.4: Some practices in quality retention of clients on ART

	Practices on certain Patient factors	Mean Score	Standard Deviation (SD)
1	Patients feeling better need necessary between 3/6 months clinic follow up and counselling	4.7727	0.6853
2	Patient healthcare provider perception influence retention of clients in care while on lifelong treatment(Patient HCWs Perceptions)	4.7727	0.6853
3	Patient feeling worse need necessary \leq monthly follow up and counselling	4.3182	0.6463
4	Patient level of motivation impacts their retention in care	4.0000	0.5345
5	Participatory approach in case summary reports, discussions, switch meetings keeps leadership focus towards quality	3.6364	1.0931
6	HIV education to patients lead to quality of retention	3.2273	1.0660
7	Patient level of independence may affect patient seeking behavior and actions leading to attrition from ART care	2.0909	0.6838
8	County government offering capacity building opportunities to strengthen knowledge on retention and viral suppression improves outcomes and enhances sustainability	3.5455	1.0568

Grand Mean	3.7955	0.8064
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Source: Field Data (2018)

From Table 4.4, the mean for the practices influencing quality retention of clients on ART was $\chi = 3.7955$. The findings show that there are several practices that influence the implementation strategies on the quality retention of ART clients in Bondo Sub County. The practices exerting the greatest influence on the quality retention include patient's feeling better need 3/6 months clinic follow up and counseling ($\chi = 4.77$) as well as patient health care provider perception ($\chi = 4.77$). These two practices are followed by patient feeling worse need necessary \leq monthly follow up and counseling ($\chi = 4.31$), then Patient level of motivation impacts their retention in care ($\chi = 4.00$).

In addition, participatory approach in case summary reports, discussions, switch meetings keeps leadership focus towards quality ($\chi = 3.63$) which is followed by County government offering capacity building opportunities to strengthen knowledge on retention and viral suppression improves outcomes and enhances sustainability ($\chi = 3.54$).

On the other hand, the practices exerting least influence were HIV education to patients lead to quality of retention ($\chi = 3.22$) and patient level of independence may affect patient seeking behavior and actions leading to attrition from ART care ($\chi = 2.09$).

In summary, 156 (89%) agreed that continuous quality improvement approach to mentorship would effectively improve retention outcomes

4.5 Social factors and Quality Retention in Care of Patients on ART

The study also sought to determine the social factors that influence quality retention in care of patients on ART.

The respondents were presented with statements on their social characteristics. The mean score and the standard deviation of the responses to these factors are as shown in Table 4.5.

Table 4.5 Social factors

	Statements on Certain Social factors	Mean Score	Standard Deviation (SD)
1	The department has an internal tracking (monitoring) capacity in case of budgetary allocation to offer better family support services e.g. home visits for patients suspected treatment failure.	3.0455	0.7854
2	The department uses monthly data on disclosure of HIV status for technical support and timely intervention.	4.0909	0.6102
3	Work improvement panels formed have equal gender representation.	4.4545	0.5958
4	Peer educators engagement has immensely impacted quality retention	3.6818	0.9946
5	Sexual relationships influence some patients viral suppression	3.5909	3.5909
6	Religion contributes to missed opportunities not only in retention of clients but also hindering elimination of mother to child transmissions.	4.7273	0.5505
7	Knowledge of one's spouse's HIV sero – status influences quality retention.	4.2273	0.5284
	Grand Mean	3.9740	1.0937

From Table 4.5, the mean for the factors influencing quality retention of clients on ART was ($\chi = 3.97$). This result shows that quality retention of ART clients in Bondo Sub County are greatly influenced by the factors listed above. The factors with the greatest influence on quality retention include: Religion contributes to missed opportunities not only in retention of clients but also hindering elimination of mother to child transmissions ($\chi = 4.72$), Work improvement panels formed have equal gender representation ($\chi = 4.45$) and Knowledge of one's spouse's HIV sero – status influences quality retention ($\chi = 4.22$). These three factors are followed by the department uses monthly data on disclosure for technical support and timely intervention at ($\chi = 4.09$).

On the other hand the factors exerting least influence was Peer educators' engagement has immensely impacted quality retention ($\chi = 3.68$) followed by Sexual relationships

influence some patients viral suppression ($\chi = 3.59$) then lastly followed by the department has an internal tracking (monitoring) capacity in case of budgetary allocation to offer better family support services e.g. home visits for patients suspected treatment failure at ($\chi = 3.04$)

4.6 Drug factors and Quality Retention in Care of Patients on ART

The other objective of the study was to explicitly establish the influence of drug factors on the quality retention in care of patients on ART. The drug factors found to have influenced quality retention in care of patients on ART were drug resistance affects quality retention (Lost to follow ups) of clients, patient sometimes forget to take drugs due to side effects may influence correct daily dosing, and patients' storage of drugs is a predictor of retention leading to targeted home visits as presented in Table 4.6

Table 4.6 Drug factors

	Statements on Certain Drug factors	Mean Score	Standard Deviation (SD)
1	Drug resistance affects quality retention (Lost to follow ups) of clients.	4.2273	0.7516
2	Patient sometimes forget to take drugs due to side effects may influence correct daily dosing/Prescription	4.2273	0.7516
3	Patients' storage of drugs is a predictor of retention leading to targeted home visits.	4.3636	0.5811
	Grand Mean	4.2727	0.6948

The investigated drug factors that influence quality retention are as follows; Patients' storage of drugs is a predictor of retention leading to targeted home visits at ($\chi = 4.36$) followed by both drug resistance affects quality retention (Lost to follow ups) of clients and Patient sometimes forget to take drugs due to side effects may influence correct daily dosing ($\chi = 4.22$) at same level.

4.7 Economic factors and Quality Retention in Care of patients on ART

The study also sought to determine the economic factors that influence quality retention in care of patients on ART. Access and knowledge to average annual cost of treatment per patient was assessed on the basis of estimates. The respondents were presented with a set of factors which they were required to indicate the extent to which they agree or disagree with in line with implementation within their scope of work.

Table 4.7 Economic factors on quality retention

	Statements on Certain Economic factors	Mean Score	Standard Deviation (SD)
1	Stock outs at patient level are contributing to low retention rates in ART programs.	4.0455	0.8985
2	With the number of patients being initiated on treatment rapidly growing, the average cost for first-line treatment annually keeps varying.	4.6818	0.4767
3	Patient's employment status influence quality of retention on ART.	4.0000	0.6172
4	Patients on ARV treatment enrolled in health insurance schemes(NHIF) improving their retention in care and empowerment	3.1818	1.2203
5	Provision of food during health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications	3.1364	0.9902
	Grand Mean	3.8091	0.8406

From the Table 4.7, The economic factors exerting great influence imply that with the number of patients being initiated on treatment rapidly growing, if aware of the average cost for first-line treatment annually ($\chi = 4.68$) came first, followed by stock outs at patient level are contributing to low retention rates in ART programs ($\chi = 4.04$) and then Patient's employment status influence quality of retention on ART ($\chi = 4.00$) and least for Patients on ARV treatment enrolled in health insurance schemes(NHIF) improving their retention

in care and empowerment ($\chi = 3.18$) and provision of food during health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications ($\chi = 3.13$).

4.8 Health System factors and Quality Retention in Care of patients on ART

The study besides sought to assess the moderating influence of health system factors on quality retention in care of patients on ART. The data obtained is presented in Table 4.8

Table 4.8 Health System factors

	Statements on Certain Health System factors	Mean Score	Standard Deviation (SD)
1	Shortage of health personnel at the facility is among the drivers of poor retention of patients in care	4.4545	0.5958
2	Strategic information, and setting of performance benchmarks by administrative managers influence quality of retention.	3.6818	0.9946
3	There is a shortage of human resource capital which is needed for successful integration of retention activities.	3.5909	3.5909
4	The service delivery has flexible patient and family centred approach from health workers to support quality of retention of clients	4.7273	0.5505
5	The current Health Financing (HIV/AIDS &TB) are sufficient and quality retention is achievable	4.2273	0.5284
	Grand Mean	4.1364	1.2520

The investigated health system factors that exert great influence on quality retention are; the service delivery has flexible patient and family centred approach from health workers to support quality of retention of clients ($\chi = 4.72$) followed by shortage of health personnel at the facility is among the drivers of poor retention of patients in care at ($\chi = 4.45$) and then the current Health Financing (HIV/AIDS &TB) are sufficient and quality retention is achievable ($\chi = 4.22$) and least for participative leadership, strategic information, and setting of performance benchmarks by administrative managers

influence quality of retention ($\chi = 3.68$) which is followed by shortage of human resource capital which is needed for successful integration of retention activities ($\chi = 3.59$).

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents the study's findings in entirety and discussions on the findings. It besides presents the conclusions of the study findings as well as the recommendations for the research problem and provides key strategic areas of future research.

5.2 Summary of the findings

This section summarizes the study's findings. The summary has been presented in order of the research objectives.

5.2.1 Patient factors and Quality Retention in Care of ART patients

The study reveals that marital status had the greatest influence on quality of retention in care of ART clients at 22.66%, then gender at 22.39%

In addition experience or knowledge in HIV services at 19.37% improve retention to care too without under estimating the impact of age and educational levels too at 18.68% and 16.90% respectively.

The findings show that there are several practices that influence the implementation strategies on the quality retention of ART clients in Bondo Sub County. The practices exerting the greatest influence on the quality retention include patient's feeling better need 3/6 months clinic follow up and counseling ($\chi = 4.77$) as well as patient health care provider perception ($\chi = 4.77$). These two practices are followed by patient feeling worse need necessary \leq monthly follow up and counseling ($\chi = 4.31$), then patient level of motivation impacts their retention in care ($\chi = 4.00$).

Participatory approach in case summary reports, discussions, switch meetings keeps leadership focus towards quality ($\chi = 3.63$) and is followed by County government offering capacity building opportunities to strengthen knowledge on retention and viral suppression improves outcomes and enhances sustainability ($\chi = 3.54$).

On the other hand, the practices exerting least influence were HIV education to patients lead to quality of retention ($\chi = 3.22$) and patient level of independence may affect patient seeking behavior and actions leading to attrition from ART care ($\chi = 2.09$)

5.2.2 Social factors and Quality Retention in Care of ART patients

The study result too show that quality retention of ART clients in Bondo Sub County are greatly influenced by the factors whose influence is greatest on quality retention starting with, Religion contributes to missed opportunities not only in retention of clients but also hindering elimination of mother to child transmissions ($\chi = 4.72$), Work improvement panels formed have equal gender representation ($\chi = 4.45$) and Knowledge of one's spouse's HIV sero – status influences quality retention ($\chi = 4.22$). These three factors are followed by the department uses monthly data on disclosure for technical support and timely intervention at ($\chi = 4.09$).

On the other hand the factors exerting least influence was Peer educators' engagement has immensely impacted quality retention ($\chi = 3.68$) followed by Sexual relationships influence some patients viral suppression ($\chi = 3.59$) then lastly followed by the department has an internal tracking (monitoring) capacity in case of budgetary allocation to offer better family support services e.g. home visits for patients suspected treatment failure at ($\chi = 3.04$)

5.2.3 Drug factors and Quality Retention in care of ART patients

The study objective on drug factors that influence quality retention revealed that Patients' storage of drugs is a predictor of retention leading to targeted home visits at ($\chi = 4.36$) followed by both drug resistance affects quality retention (Lost to follow ups) of clients

and Patient sometimes forget to take drugs due to side effects may influence correct daily dosing ($\chi = 4.22$) at same level.

5.2.4 Economic factors and Quality Retention in care of ART patients

The study objective on economic factors that influence quality retention revealed that at the top factors exerting great influence started with the number of patients being initiated on treatment rapidly growing, if aware of the average cost for first-line treatment annually ($\chi = 4.68$), followed by stock outs at patient level contributing to low retention rates in ART programs ($\chi = 4.04$) and then Patient's employment status influence quality of retention on ART ($\chi = 4.00$) and least for Patients on ARV treatment enrolled in health insurance schemes (NHIF) improving their retention in care and empowerment ($\chi = 3.18$) and provision of food during health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications ($\chi = 3.13$).

5.2.5 Health System factors and Quality of Retention in care of ART patients

The moderating influence of health system factors was found to exert great influence on quality retention with the service delivery has flexible patient and family centred approach from health workers to support quality of retention of clients ($\chi = 4.72$) followed by shortage of health personnel at the facility is among the drivers of poor retention of patients in care at ($\chi = 4.45$) and then the current Health Financing (HIV/AIDS & TB) are sufficient and quality retention is achievable ($\chi = 4.22$) and least for participative leadership, strategic information, and setting of performance benchmarks by administrative managers influence quality of retention ($\chi = 3.68$) which is followed by shortage of human resource capital which is needed for successful integration of retention activities ($\chi = 3.59$).

5.3 Discussions of the findings

This segment presents a discussion of the study findings and compares them with the literature.

5.3.1 Patient factors and Quality Retention in Care of ART patients

The study reveals that marital status had the greatest influence on quality of retention in care of ART clients at 22.66% which speaks to a study on “Predictors of poor retention on antiretroviral therapy as a major HIV drug resistance early warning indicator in Cameroon” (Marrone 2016) whose results on “nationwide, retention on ART at 12 months was 60.4% (2023/3349); only six sites and one region achieved acceptable performances. Gender as a patient factor at 22.39% speaks to a study on The Role of Gender in Patient-Provider Relationships: A Qualitative Analysis of HIV Care Providers in Western Kenya with Implications for Retention in Care” (Wachira, 2018). Thus helps to “provide programmatic components addressing gender inequities in the health care setting which are urgently needed to effectively leverage the patient-provider relationship and fully promote long-term adherence and retention in HIV care”.

In addition the findings show that knowledge in HIV services (19.37%) and the impact of age (18.68%) improve retention to care as well as educational levels (16.90%).

The findings show that there are several practices that influence the implementation strategies on the quality retention of ART clients in Bondo Sub County. The practices exerting the greatest influence on the quality retention include patient’s feeling better need 3/6 months clinic follow up and counseling ($\chi = 4.77$) as well as patient health care provider perception ($\chi = 4.77$). These two practices are followed by patient feeling worse need necessary \leq monthly follow up and counseling ($\chi = 4.31$), then patient level of motivation impacts their retention in care ($\chi = 4.00$).

Participatory approach in case summary reports, discussions, switch meetings keeps leadership focus towards quality ($\chi = 3.63$) and is followed by County government offering capacity building opportunities to strengthen knowledge on retention and viral suppression improves outcomes and enhances sustainability ($\chi = 3.54$).

On the other hand, the practices exerting least influence were HIV education to patients lead to quality of retention ($\chi = 3.22$) and patient level of independence may affect patient seeking behavior and actions leading to attrition from ART care ($\chi = 2.09$) this concurs with a study by Roural et al. (2009) these side effects in turn may affect patient seeking behavior and actions and may lead to attrition from ART care. Patients feel that “side effects are inimical to their health and comfort and interfere with their engagement in livelihood activities” (Musheke et al., 2012)

5.3.2 Social factors and Quality Retention in Care of ART patients

The study results too show that quality retention of ART clients in Bondo Sub County are greatly influenced by the factors whose influence is greatest on quality retention starting with, Religion contributes to missed opportunities not only in retention of clients but also hindering elimination of mother to child transmissions ($\chi = 4.72$) speaking to an example from Nomiya church in Siaya, the church allows polygamy, with men allowed to marry as many as 20 wives. It also prides itself as the first independent religious institution in Kenya that accepts wife inheritance (Gwengi, 2013)

Work improvement panels formed have equal gender representation ($\chi = 4.45$) and In terms of Knowledge of one’s spouse’s HIV sero – status influences quality retention ($\chi = 4.22$) that speaks to PLWHA avoid disclosing their sero-HIV status to their spouses, social network or other family members for fear of marriage breakdown, rejection, discrimination and loss of employment. When “social support is threatened by involuntary disclosure of HIV status, individuals abandon treatment as a protective mechanism” (Musheke et al., 2012). Thus Knowledge of one’s spouse’s HIV sero – status influences quality retention ($\chi = 4.22$) helping to address the gaps from such a study.

On the other hand the factors exerting least influence was Peer educators’ engagement has immensely impacted quality retention ($\chi = 3.68$) followed by Sexual relationships influence some patients viral suppression ($\chi = 3.59$) then lastly followed by the department has an internal tracking (monitoring) capacity in case of budgetary allocation

to offer better family support services e.g. home visits for patients suspected treatment failure at ($\chi = 3.04$)

5.3.3 Drug factors Quality Retention in care of ART patients

The study objective on drug factors that influence quality retention revealed that Patients' storage of drugs is a predictor of retention leading to targeted home visits at ($\chi = 4.36$) followed by both drug resistance affects quality retention (Lost to follow ups) of clients and Patient sometimes forget to take drugs due to side effects may influence correct daily dosing ($\chi = 4.22$). This concurs with various studies that reveal the shared interconnectivity of cognitive to "health literacy skills, further emphasizing the need to re-evaluate and assess health behaviors correlated to these mentioned common tenets and constructs. Particularly, in a chronic disease such as HIV/AIDS with a substantial prevalence of neuro-cognitive impairment, prompts the need to assess cognitive to better understand and tailor make health literacy in different settings".

5.3.4 Economic factors and Quality Retention in care of ART patients

The study objective on economic factors that influence quality retention revealed that at the top factors exerting great influence started with the number of patients being initiated on treatment rapidly growing, if aware of the average cost for first-line treatment annually ($\chi = 4.68$), followed by stock outs at patient level contributing to low retention rates in ART programs ($\chi = 4.04$) and then Patient's employment status influence quality of retention on ART ($\chi = 4.00$) and least for Patients on ARV treatment enrolled in health insurance schemes(NHIF) improving their retention in care and empowerment ($\chi = 3.18$) unlike findings in Uganda, where "four insurance firms surveyed all provide coverage for HIV and AIDS (Katusiime, 2011; Kigonya, 2012; Kirraga, 2011; Korukundo, 2011) and re looking at such options".

Provision of food during health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications ($\chi = 3.13$) as revealed by this study which speaks to lack of formal education and inadequate health literacy about ART and

HIV/AIDS can make patients not to understand about the effectiveness of medications. This may lead to challenges in adhering to treatment and poor retention in care (Tuller et al., 2010).

5.3.5 Health System factors and Quality of Retention in care of ART patients

The moderating influence of health system factors was found to exert great influence on quality retention with the service delivery has flexible patient and family centred approach from health workers to support quality of retention of clients ($\chi=4.72$).

This study speaks to the fact that shortage of health personnel at the facility is among the drivers of poor retention of patients in care at ($\chi=4.45$) and this concurs with the fact that “many public facilities in sub-Saharan Africa scaled up ART without a comparable increase in personnel to accommodate the larger number of patients (Lambdin et al., 2011). The shortage of human resource for health has severely hampered the rollout of ART in Sub-Saharan Africa” (Callaghan, Ford and Schneider, 2010).

The study too shows that current Health Financing (HIV/AIDS &TB) are sufficient and quality retention is achievable ($\chi=4.22$) and participative leadership, strategic information, and setting of performance benchmarks by administrative managers influence quality of retention ($\chi=3.68$) to help bridge the shortage of human resource capital which is needed for successful integration of retention activities ($\chi=3.59$). It is also concurs with the fact that high patient loads at health facilities also lead to long waiting times which is among the key drivers of attrition for patients on ART. According to Alamo et al., (2013),

5.4 Conclusions of the study

The findings showed that marital status under patient factors had the greatest influence on quality of retention in care of ART clients (22.66%), gender (22.39%), experience or knowledge in HIV services (19.37%), age 18.68% and educational level (16.90%).

On the other hand practices exerting the greatest influence on the quality retention included patient's feeling better need 3 or 6 months clinic follow up (differentiated care) and counseling ($\chi = 4.77$) as well as patient health care provider perception ($\chi = 4.77$). It is worth noting that patient feeling worse need necessary \leq monthly follow up and counseling ($\chi = 4.31$) and help improve patient level of motivation that impacts retention in care ($\chi = 4.00$).

In addition, participatory approach in case summary reports, discussions, switch meetings keeps leadership focus towards quality ($\chi = 3.63$). This is backed by the fact that 156 (94.5%) agreed that continuous quality improvement approach to mentorship would effectively improve retention outcomes

In Bondo sub county, the mean score for the social factors influencing quality retention of clients on ART was $\chi = 3.97$, with the greatest influence on quality retention being religion contributing to missed opportunities not only in retention of clients but also hindering elimination of mother to child transmissions ($\chi = 4.72$) and Knowledge of one's spouse's HIV sero – status influences quality retention ($\chi = 4.22$).

The third variable under study was drug factors influence on quality retention which revealed that Patients' storage of drugs is a predictor of retention leading to targeted home visits at ($\chi = 4.36$) and that drug resistance affects quality retention (Lost to follow ups) of clients who sometimes forget to take drugs due to side effects may influence correct daily dosing ($\chi = 4.22$).

The fourth variable under the study was to determine the economic factors that influence quality retention in care of patients on ART. The economic factors exerted influence with the number of patients being initiated on treatment rapidly growing, if you aware of the average cost for first-line treatment annually ($\chi = 4.68$), stock outs at patient level are contributing to low retention rates in ART programs ($\chi = 4.04$), then Patient's employment status influence quality of retention on ART ($\chi = 4.00$) and for Patients on ARV treatment

enrolled in health insurance schemes(NHIF) improving their retention in care and empowerment ($\chi =3.18$) and provision of food during health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications ($\chi =3.13$).Thus medical insurance can re look at options for covering chronic illnesses by designing favorable public private partnership with national government structures

From this thus health system factors was found to exert great influence on quality retention with the service delivery having flexible patient and family centred approach from health workers to support quality of retention of clients ($\chi =4.72$) .

This study speaks to the fact that shortage of health personnel at the facility is among the drivers of poor retention of patients in care at ($\chi =4.45$)

5.5 Recommendations of the study

From the findings the study recommends that:

1. Relevant stakeholders need to invest in reviewing health education content for specific sub populations. From the study there is need to increase knowledge and conversation on retention strategies amongst implementing partners embedded in a personalized CQI approach to mentorship in retention of clients on ART to be scaled up and capitalize on marital status, gender and knowledge in HIV services which had the greatest influence on quality of retention in care of ART clients. It is also vital that differentiating care improves quality of retention on ART backed by health care workers' perceptions.
2. There is need to address the cost quality of retaining patients on care or come up with affirmative action to cushion social factors affecting quality of care that on

the lowest lead to deaths and lost to follow up. This should have lenses on issues of religion, work improvement teams, and client disclosure

3. In terms of drug factors there is need to redesign health literacy skills further emphasizing the need to assess health behaviors since patients' storage of drugs is a predictor of retention leading to targeted home visits.
4. Concerning economic factors, average cost for first-line treatment annually, stock outs at patient level and patient's employment status influence quality of retention on ART contributing to low retention rates in ART programs hence need to undertake robust tracking.
5. Further to health system factors since majority of the respondents agreed that shortage of health personnel at the facility is among the drivers of poor retention of patients in care hence the need to look at workload indicators. Thus implying that service delivery should have flexible patient and family centred approach from health workers to support quality of retention of clients since current Health Financing (HIV/AIDS &TB) are sufficient and quality retention is achievable

5.6 Suggestions for further research

Majority of the respondents alluded to the fact that shortage of health personnel at the facility is among the drivers of poor retention of patients in care. This would help stakeholders know how to improve on consistency and sustaining the gains made in the field. Also studies could be conducted to uncover the challenges that are faced by medical insurance covering chronic illnesses and options available in resource limited settings.

The first area for future research could be a study on; Impact of NGOs on quality retention in care of patients on antiretroviral treatment. This will bring out lessons learnt in performance based funding.

Secondly another area for future research could be Significance of quality retention in care of patients on antiretroviral treatment to County Government leadership in resources limited settings. This will highlight the issues underlying the challenges of retention in care of patients on antiretroviral treatment and support evidence based and informed decision making in Counties.


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APPENDICES

Appendix I: Letter of Introduction


UNIVERSITY OF NAIROBI
OPEN DISTANCE AND e- LEARNING CAMPUS
SCHOOL OF OPEN AND DISTANCE LEARNING
DEPARTMENT OF OPEN LEARNING
NAIROBI LEARNING CENTRE

Your Ref: _____
Our Ref: _____
Telephone: 318262 Ext. 129

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30557
NAIROBI
11th May, 2018


REF: UON/ODeL/NLC/28/281


RE: JAIRUS BARASA OUMA - REG NO.L50/82608/2015

The above named is a student at the University of Nairobi Open, Distance and e-Learning Campus, School of Open and Distance Learning, Department of Open Learning pursuing Master of Arts in Project Planning and Management.

He is proceeding for research entitled "Influence of Health Belief model on Quality of Retention in Care of Patients on Antiretroviral Treatment in Bondo Sub County; Siaya County.

Any assistance given to him will be appreciated.




CAREN AWILLY
CENTRE ORGANIZER
NAIROBI LEARNING CENTRE

Appendix II: Questionnaire for partner/MoH Employees

The major objective of this study is to establish the influence of Health Belief Model on Quality Retention in Care of patients on Antiretroviral Treatment in Bondo Sub County; Siaya County, Kenya

. Instruction for completion:

- i. Kindly answer the questions as objectively and truthfully as possible.
- ii. Kindly mark in the boxes and spaces provided after each question to reflect your answer in accurate and appropriate manner.

SECTION A: Background Information

1. **Gender:** Male [] Female []
2. **Age:** Below 18 year [] 19 – 26 years [] 27– 35 years []
36 – 45 years [] 46-55 years [] Above 55 years []
3. **Marital status:** Married [] Single [] Divorced [] Separated []
Widowed []
4. **Level of education:** Primary education [] Secondary education []
College [] Tertiary []
University []
5. **Years of service in the county:** Less than 2 years [] 2 – 5 years []
6 – 10 years [] Over 10 years []

SECTION B: Patient factors influencing quality of retention in care of patients on Antiretroviral Treatment

1. Which of the listed personal patient characteristics influence quality retention of clients in ART services?

Age [], gender [], marital status [], education level [], experience or knowledge in HIV services [],

If as participant don't know []

2. The following are some practices in quality retention of clients on ART, Please indicate the extent to which they apply to you.

1 Extremely small Extent 2 Very small Extent 3 Not Sure 4 Large Extent 5 Very large Extent

Statement	1	2	3	4	5
Patient feeling better need necessary between 3/6 months follow up and counselling.					
Patient -healthcare care provider perception influence retention of clients in care while on lifelong treatment.					
Patient feeling worse need necessary ≤ monthly follow up and counselling.					
Patient level of motivation impacts their retention in care					
Patient level of independence may affect patient seeking behavior and actions leading to attrition from ART care.					
HIV education to patients leads to quality of retention					
Participatory approach in case summary reports, discussions, switch meetings keeps leadership focus towards quality					

County government offering capacity building opportunities to strengthen knowledge on retention and viral suppression improves outcomes and enhances sustainability.					
--	--	--	--	--	--

3. As part of your work have you read the National HIV Quality Improvement Framework (KHQIF) which provides the blueprint for ensuring quality HIV services to patients and clients, and has been modeled after the Kenya Quality Model for Health (KQMH) to ensure quality in HIV-specific healthcare services?

Yes [] No [] Not sure []

4. In which area do you need capacity building in order to address quality retention activities more effectively in your area of responsibility? Tick one.

- a. Continuous Quality documentation []
- b. Collection and analysis of quality retention data []
- c. Retention resources []
- d. Monitoring, evaluation and reporting []

SECTION C: Social factors and Quality Retention in Care of patients on ART

5. The following are statements on commitment to quality retention and its social nature. Please indicate your level of agreement to each of the factors as practiced in your department.

1 Strongly Disagree 2 Disagree 3 Not Sure 4 Agree 5 Strongly Agree

Statement	1	2	3	4	5
The department has an internal tracking (monitoring) capacity in case of budgetary allocation to offer better family support services e.g. home visits for patients suspected treatment failure.					
The department uses monthly data on disclosure for technical support and timely intervention.					
Work improvement panels formed have equal gender representation.					
Peer educators engagement has immensely impacted quality retention					
Sexual relationships influence some patients viral suppression					
Religion contributes to missed opportunities not only in retention of clients but also hindering elimination of mother to child transmissions.					
Knowledge of one's spouse's HIV sero – status influences quality retention.					

SECTION D: Drug factors and Quality Retention in Care of patients on ART

6. Kindly indicate the extent to which each of the following practices is used in your department.

1 Very small Extent 2 Small Extent 2 Not Sure 3 Large Extent 4 Very large Extent

Statement	1	2	3	4	5
Drug resistance affects quality retention (Lost to follow ups) of clients.					
Patient sometimes forget to take drugs due to side effects may influence correct daily dosing					
Patients' storage of drugs is a predictor of retention leading to targeted home visits.					

SECTION E: Economic factors and Quality Retention in Care of patients on ART

7. a) What is the annual average cost of treatment per patient (Ksh)

20,000-30,000 [] 30,001-40,000 [] 40,001-50,000 [] above
50,000 []

b) The following are some economic factors influencing retention. Please indicate to what extent they affect your department.

1 Very small Extent 2 Small Extent 2 Not Sure 3 Large Extent 4 Very large Extent

Statement	1	2	3	4	5
Stock outs at patient level are contributing to low retention rates in ART programs.					
With the number of patients being initiated on treatment rapidly growing, are you aware of the average cost for first-line treatment annually.					
Patient's employment status influence quality of retention on ART.					
Patients on ARV treatment enrolled in health insurance schemes(NHIF) improving their retention in care and empowerment					
Provision of food during health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications					

SECTION F: Health system factors and Quality of Retention in Care of patients on ART

8. The following are statements on health system thinking in line with quality of retention services. Kindly indicate the extent to which each of the factors is practiced in your department.

1 Strongly Disagree 2 Disagree 3 Not Sure 4 Agree 5 Strongly Agree

Statement	1	2	3	4	5
Shortage of health personnel at the facility is among the drivers of poor retention of patients in care					
Strategic information, and setting of performance benchmarks by administrative managers influence quality of retention.					
There is a shortage of human resource capital which is needed for successful integration of retention activities.					
The service delivery has flexible patient and family centred approach from health workers to support quality of retention of clients					
The current Health Financing (HIV/AIDS &TB) are sufficient and quality retention is achievable					

Thank you for your time and cooperation

Appendix III: Interview Schedule for Department Heads

Dear respondent, these interview questions are meant to collect information on a study that is being conducted in your County on the topic, “Influence of Health Belief Model on Quality Retention in Care of patients on Antiretroviral Treatment in Bondo Sub County; Siaya County” in partial fulfillment of my postgraduate Masters of Arts degree in Project Planning and Management. Kindly answer the questions truthfully. The information and feedback given will be treated with confidentiality.

1. For how long have you served as a professional in the County?
2. What is your level of education?

SECTION B: Patient factors influencing quality retention in care of patients on Antiretroviral Treatment

3. Which personal patient characteristics influence quality retention of clients in ART services?
4. Does giving patients who are feeling better or categorized stable for 3 or 6 months follow up improve quality of retention?
5. Is there any patient-healthcare provider perception that you think influence retention of clients in care while on lifelong treatment?
6. Does patient level of motivation impacts their retention in care?
7. Does patient level of independence may affect health seeking behavior and actions leading to attrition from ART care?
8. Does the County government offer capacity building opportunities to strengthen your knowledge on retention and viral suppression issues to improve outcomes and enhance sustainability?
9. As part of your work have you read the National HIV Quality Improvement Framework (KHQIF) which provides the blueprint for ensuring quality HIV services

to patients and clients, and has been modeled after the Kenya Quality Model for Health (KQMH) to ensure quality in HIV-specific healthcare services?

SECTION C: Social factors and Quality Retention in Care of patients on ART

- 10. Does your department have an internal tracking (monitoring) capacity in case of budgetary allocation to offer better family support services e.g. home visits for patients suspected treatment failure?
- 11. Does your department use disclosure data for technical support and timely interventions on monthly basis?
- 12. Does sexual relationship influence viral suppression?
- 13. Does religion still contribute to missed opportunities & hinder HIV risk reduction not only in retention of clients but also hindering elimination of mother to child transmissions?

SECTION D: Drug factors and Quality Retention in Care of patients on ART

- 14. Briefly explain how drug resistance and suspected treatment failure affects quality retention in your facility? Specify

- 15. Do you think poor storage of drugs by patients and his/her cognitive skills can affect correct daily dosages hence influencing quality retention of clients in care?

SECTION E: Economic factors and Quality Retention in Care of patients on ART

- 16. Are there cases where by some of your clients have experienced stock outs of ARVs at their level or condoms (biomedical & combination prevention) which may contribute to low retention rates in ART programs?
- 17. With the number of patients being initiated on treatment rapidly growing, are you aware of the average cost of first-line ART treatment annually? -----

18. Patient's employment status influence quality of retention on ART?
19. Do you think when patients on ARV treatment are enrolled in health insurance schemes improves their retention in care and empowerment (NHIF)?
20. Do you think provision of food and health literacy on ART and HIV/AIDS can make patients understand the effectiveness of medications?

SECTION F: Health system factors and Quality Retention in Care of patients on ART

21. Does shortage of health personnel at the facility among the drivers of poor retention of patients in care in your HF?
22. Does participative leadership, strategic information, and setting of performance benchmarks by administrative managers influence quality of retention?
23. The service delivery has flexible patient and family centred approach from health workers to support quality of retention of clients?
24. Workload Indicators of Staffing Needs and staff rationalization favored adherence and retention of patients processes

Thank you for your time and cooperation

Appendix IV: Authorization Letters

**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-3513471,
2541348, 3310571, 2219420
Fax: +254-20-318243, 318249
Email: ncg@nacost.go.ke
Website: www.nacost.go.ke
When replying please quote

HAILUOVI, Upper Kabete
Off Wangari Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No: **NACOST/P/18/97829/22797** Date: **13th June, 2018**


Jairus Barasa Ouma
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Influence of health belief model on quality of retention in care of patients on antiretroviral treatment in Bondo Sub County; Siaya County, Kenya"* I am pleased to inform you that you have been authorized to undertake research in **Siaya County** for the period ending **8th June, 2019.**

You are advised to report to **the County Commissioner and the County Director of Education, Siaya County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.


DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Siaya County.

The County Director of Education
Siaya County.

www.nacost.go.ke

COUNTY GOVERNMENT OF SIAYA



DEPARTMENT OF HEALTH AND SANITATION

E-mail: siayachd@gmail.com
ADJACENT TO JCC CHURCH
PHONE:
SIAYA TOWN

COUNTY HEALTH HEADQUARTERS
SIAYA COUNTY
P O BOX 597
SIAYA

Our Ref: SYA/CHD/RESEARCH/VOL. II (87)

27TH JULY, 2018

The Sub-county Medical Officers of Health
Medical Superintendents
BONDO SUB-COUNTY

**RE: CLEARANCE TO CONDUCT A STUDY ON INFLUENCE OF HEALTH BELIEF
MODEL ON QUALITY OF RETENTIONION CARE OF PATIENTS ON
ANTIRETROVIRAL TREATMENT**

Jairus Barasa Ouma of University of Nairobi has received authorization to conduct the above referenced study in our County.

The study period will expire on 8th June, 2019.

This is to notify you that the study has been approved by the office of the undersigned.

Kindly accord necessary assistance to the team.



Dr. Bob Awino
DCDH (Preventive & Promotive Health Services)
SIAYA



REPUBLIC OF KENYA



THE PRESIDENCY
MINISTRY OF INTERIOR & CO-ORDINATION OF NATIONAL GOVERNMENT

E-Mail: cc.siaya@yahoo.com
When replying please quote

COUNTY COMMISSIONER
SIAYA COUNTY
P O Box 83 - 40600
SIAYA

CC/SC/A.31 VOL.II/(102)

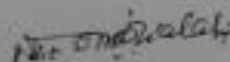
26th July, 2018.

Deputy County Commissioner
BONDO SUB COUNTY

RE: RESEARCH AUTHORIZATION - JAIRUS BARASA OUMA

The person referred to above from University of Nairobi has been authorized by the Director-General/CEO, National Commission for Science, Technology and Innovation vide letter Ref. No. NACOSTI/P/18/97829/22707 dated 13th June, 2018 to carry out research on *"Influence of health belief model on quality of retention in care of patients on antiretroviral treatment in Bondo Sub County,"* for the period ending 8th June, 2019.

The purpose of this letter therefore is to ask that you accord him the necessary support as he carries out research in your Sub County.


M.N. OLE TIALAL
COUNTY COMMISSIONER
SIAYA COUNTY

Copy to: Jairus Barasa Ouma
University of Nairobi
P.O. Box 30197 - 00100
NAIROBI

County Director of Education
SIAYA COUNTY



REPUBLIC OF KENYA
MINISTRY OF EDUCATION
State Department for Early Learning and of Basic Education

COUNTY DIRECTOR OF EDUCATION
SIAYA COUNTY
P.O. BOX 564
SIAYA

E-mail: cdesiaya2016@gmail.com

When replying please quote
SCA. /URA/10 VOL1/64

Thursday, July 26, 2018

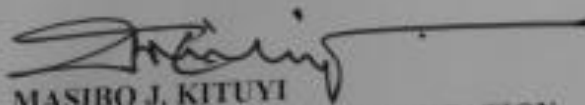
TO WHOM IT MAY CONCERN

RESEARCH AUTHORIZATION: JAIRUS BARASA OUMA

The above named person has been mandated to carry out research in Siaya County vide an authorization letter from National Commission for Science and Technology and Innovation Ref. No. NACOSTI/P/18/97829/22797 dated 13th June, 2018.

The research title is "*Influence of health belief model on quality of retention ion care of patients on antiretroviral treatment in Bondo Sub county; Siaya County, Kenya*"

Please accord him the necessary assistance in this county as she may require.


MASIBO J. KITUYI
COUNTY DIRECTOR OF EDUCATION
SIAYA COUNTY

c.c.

County Commissioner
Siaya County


Appendix V: Research Permit

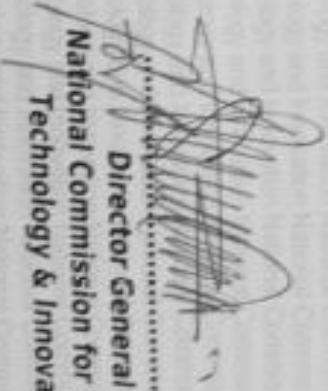
THIS IS TO CERTIFY THAT:
MR. JAIRUS BARASA OUMA
of UNIVERSITY OF NAIROBI, 26480-100
Nairobi, has been permitted to conduct
research in Siaya County

on the topic: INFLUENCE OF HEALTH
BELIEF MODEL ON QUALITY OF
RETENTION IN CARE OF PATIENTS ON
ANTIRETROVIRAL TREATMENT IN BONDO
SUB COUNTY; SIAYA COUNTY, KENYA

for the period ending:
8th June, 2019

Permit No : NACOSTI/P/18/97829/22797
Date Of Issue : 13th June, 2018
Fee Recieved :Ksh 1000




Director General
National Commission for Science,
Technology & Innovation

.....
Applicant's
Signature

Appendix VI- Work plan

ACTIVITY	FEB	APRIL	MAY	JUNE	JULY	AUG	SEPT/OCT
Proposal Writing	X	X					
Research presentation			X				
Data Collection				X			
Data Editing					X		
Data analyzing					X		
Research Report Writing						X	
Research final presentation							X