COLLEGE OF BUSINESS AND MANAGEMENT SCIENCES

FEMALE RETENTION IN HIV/AIDS CARE; THE ROLE OF SACCOS IN KAMPALA

By

LYNDA NAMUKWAYA

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JANUARY 2019
DECLARATION

I declare that this research report is original work done by me and has not been submitted in whole or in part, in any previous reports under the college of Business and Management Sciences at the University of Makerere, Uganda.

LYNDA NAMUKWAYA
(RESEARCHER)

Signature.............................
Date.................................
APPROVAL

This is to certify that this research work was carried out by Lynda Namukwaya with the registration number: 2016/HD06/1003U.

I examined and found it acceptable for the award of Master’s degree in Economic Policy and Planning, University of Makerere, Uganda.

DR. EDWARD BBAALE
(SUPERVISOR)

Signature........................................

Date: 10th 01, 19

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DEDICATION

This research report is dedicated first to the Almighty God for His enabling strength He bestowed on me in completing this work. Secondly to my wonderful parents, Mr. Leonard Kabunga and Mrs. Rose Kabunga.
I am most grateful to God Almighty, the sole provider of knowledge, wisdom, love, mercy and grace for his protection throughout the writing of the report. I sincerely appreciate my supervisor, Dr. Edward Bbaale who offered constructive criticism and corrections that led me through the various stages of this report. I appreciate my parents, Mr. and Mrs. Lenny Kabunga, my siblings, my friends and my colleagues for their unquantifiable love and financial assistance during this period. May God bless you all in Jesus’ name, Amen.
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<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
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<td>ART</td>
<td>Antiretroviral Therapy</td>
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<td>ARVs</td>
<td>Antiretroviral</td>
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<td>CD4</td>
<td>Cluster of Differentiation 4</td>
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<td>CMV</td>
<td>Cytomegalovirus</td>
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<td>HAART</td>
<td>Highly Active Antiretroviral Therapy</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>IDI</td>
<td>Infectious Diseases Institute</td>
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<td>KCCA</td>
<td>Kampala Capital City Authority</td>
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<tr>
<td>KS</td>
<td>Kaposi’s sarcoma</td>
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<td>LTFU</td>
<td>Lost to Follow up</td>
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<td>MoH</td>
<td>Ministry of Health</td>
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<tr>
<td>NGO</td>
<td>Non-governmental Organization</td>
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<td>PCP</td>
<td>Pneumocystis Carinii Pneumonia</td>
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<td>PLWHA</td>
<td>People Living with HIV/AIDS</td>
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<td>SACCOs</td>
<td>Savings and Credit Cooperative Organizations</td>
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<td>SSA</td>
<td>Sub-Saharan Africa</td>
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<td>TASO</td>
<td>The AIDS Support Organization</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<td>UNAIDS</td>
<td>United Nations Program on HIV and AIDS</td>
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ABSTRACT

Retention in HIV care is key in achieving longevity among HIV positive patients as it guarantees desirable clinical outcomes like suppression of the HIV virus in the body. However, HIV disproportionately affects women and adolescent girls because of vulnerabilities created by unequal cultural, social and economic status especially in resource limited settings in a patriarchal African setting in Sub-Saharan Africa.

This study investigated the impact of Savings and Credit Cooperative Organizations (SACCOs) on retention in HIV care among women accessing HIV care services. A cross-sectional study was conducted among 257 adult women accessing HIV Care in 6 health facilities in Kampala, Uganda. Questionnaires were applied only to HIV positive females aged 18 years and above. The data was first analyzed through pie charts, bar graphs and cross tabulation then secondly, empirically using a logit regression model.

The study findings revealed that members of a SACCO were 3 times more likely to be retained in HIV care (with p value=0.063) compared to non-SACCO members. Relatedly, majority of the women (17.5%) attributed lack of transport to the facility as their major reason for missing clinic appointments. Surprisingly, the study also revealed that unemployed women were more likely to be retained in HIV care than their employed counterparts and this was statistically significant at a 5% confidence level with a p value of 0.072. This could be attributed to the fact that majority of the employed participants were self-employed which in its nature, usually requires a lot of time investment by the owner hence easily missing clinic appointments as opposed to their counterparts.

Using the above findings, HIV/AIDS care programs through the Ministry of Health, especially Non-Government Organizations (NGOs), should integrate financial education and empower women to establish small savings groups whose goal is geared towards socio-economic transformation for health care access.

HIV/AIDS care programs should also strengthen the differentiated service delivery models at all health facilities offering HIV care. This will greatly benefit among others, the self-employed, because part of this entails the patients being represented by their trusted caretakers to pick the drugs on their behalf whenever not able to keep their appointments. This can help to ensure the patients remain with access to their treatment at all times hence retained in HIV care.
CHAPTER ONE
INTRODUCTION

1.0 Introduction
This chapter makes a case for the significance of the problem, lays out the reasoning behind it, contextualizes the study, and provides an introduction to its basic components.

1.1 Background
The Human immunodeficiency virus (HIV) disproportionately affects women compared to men (UNAIDS, 2015) and continues to be a public health burden with a total number of People Living with HIV (PLHIV) estimated at 36.7 million with 17.8 million being women by the end of 2016 (WHO 2016). Retention in HIV care which is defined as continuous engagement in appropriate medical care plays a vital role in the access of Antiretroviral Therapy (ART), the treatment for HIV positive patients, as this therapy is lifelong. This helps achieve vital goals of continued HIV viral load suppression to help drive the 90; 90; 90 United Nations Program on HIV/AIDS (UNAIDS) objective of eliminating HIV/AIDS by 2030; 90% of PLHIV knowing their HIV status, 90% of those knowing their HIV status on HIV treatment, and 90% of those on HIV treatment virally suppressed) (UNAIDS 2014). Poor retention in HIV care/ART is a major driver of poor performance and predicts poor survival with HIV infection despite the expansion and advancement of ART services. (Giordano, Gifford et al. 2007, Rasschaert, Koole et al. 2012, Babatunde, Ojo et al. 2015)

The number of people living with HIV who have started life-saving ART has markedly increased in low- and middle-income countries (LMICs) (global AIDS epidemic, UNAIDS, 2015). This impressive development, however, has led to overcrowding in health care facilities, longer waiting times during visits, and reduced time for counseling and clinical care of newly enrolled HIV positive patients. In most public sector clinics in LMICs, it has also restricted the workforce’s capacity to provide ongoing adherence support and monitor patients who do not remain engaged in care to ensure optimal ART-related benefits on patient health and community HIV prevention. (Ford N, 2011)

The levels of retention in HIV care drop the longer the patients are on ART. This is evidenced by a systematic review in which about 43% of all patients not retained in HIV care were known to have died. Unweighted averages of reported retention rates were 78%, 71% and 69% at 12, 24, and 36 months after treatment initiation respectively, with estimated 36-month retention at 80% in Asia and 64% in Latin America and the Caribbean. From life table analysis, the estimated
retention at 12, 24, 36, 48 and 60 months was 83%, 74%, 68%, 64% and 60%, respectively (Fox and Mpa 2015).

Sub-Saharan Africa (SSA) still remains the worst affected with 25.6 million PLHIV about 2/3 of the global HIV population. A Collaborative analysis of data from HIV treatment programs in SSA observed that 6.6% of patients were retained on ART, 18.8% had stopped ART and 14.7% had died at 5 years (Haas, Zaniewski et al. 2018). Another World Health Organization (WHO) report evaluating two systematic reviews by Fox and Rosen (1,8) demonstrated retention on ART at 24 months of 70-80% in the same population of Sub-Saharan Africa (Fox and Rosen 2010). SSA also happens to house most LMICs in which women populations are underpowered economically putting them at more risk of defaulting off care, causing them to continuously be vulnerable to the HIV/AIDS scourge. (Maskew, MacPhail et al. 2007, Geng, Nash et al. 2010, Ochieng-Ooko, Ochieng et al. 2010). One study notes that women demanded financial incentives to remain in care (Clouse, Mongwenyana et al. 2018)

Uganda has a prevalence of 7.3%; about 1.4 million HIV-infected people and 28,000 AIDS related deaths were reported by 2015 (UAC 2016). 8% of women are living with HIV, compared to 6% of men (Uganda AIDS Indicator Survey (UAIS), 2014). Reasons for women's higher HIV burden relate to both physiological and socio-structural factors (Mane P, 2001). In particular, women face gender and power inequity, economic vulnerability and dependence, and gender-based violence, which may limit options for negotiating intimate relationships and safer sex (Quinn TC, 2005) Furthermore, retention in HIV care was observed at 71.7% among 678 newly initiated on ART. Most patients were already falling behind appointment schedules at their first ART follow-up (median: 28-days post-initiation vs. recommended 14 days). 27, 3% of newly initiated patients had follow-up appointments scheduled 45+ days apart rather than monthly per national guidelines (Boeke, Nabitaka et al. 2018).

Another study in a similar setting observed 307 (27%) as lost to care (not retained) according to clinic records. Among these, 195 (63%) were selected for tracing; outcomes were ascertained in 118 (61%). 7 patients (6%) had died, 40 (34%) were in care elsewhere and 71 (60%) were out of care. Loss from care at 9 months was 30.2% (95% CI 27.3% to 33.5%). After incorporating outcomes from tracing, loss from care decreased to 18.5% (95% CI 13.8% to 23.6%). A pre-ART tracking study by Geng and colleagues at a clinic in Uganda (10) found that from those lost to follow up (LTFU), 31% were deceased. Of those who were alive and directly contactable, 37% had disengaged from care with 63% being retained in care elsewhere. They noted that attrition
rates were significant after being assessed as ART eligible, with approximately 21% attrition 12 months after becoming ART eligible by CD4 count (Geng, Nash et al. 2010).

Scaling up of ART has improved quality and longevity among people living with HIV/AIDS and it is estimated that 21 million patients are receiving ART (Bajpai, Chaturvedi et al. 2016, WHO 2016), however, aspects affecting retention on ART are multifaceted ranging from; socio-structural factors such as program characteristics, transportation, poverty, work/child care responsibilities, economic stability and social relations (Geng, Nash et al. 2010). Challenges at household level play a fundamental role as access to ART facilities may involve travelling to these facilities, affording basic healthcare packages for healthy living such as nutrition, and routine communication with health workers (Mugavero, Lin et al. 2009). One study in Uganda noted that PLHIV travel further to access healthcare (Akullian, Mukose et al. 2016) and another noted poverty as a significant deterrent to retention in HIV care among adolescents (Nabukeera-Barungi, Elyanu et al. 2015).

Retention on ART is key as it guarantees desirable clinical outcomes, however, it is well documented that there exists a main challenge of retaining HIV positive patients especially in resource limited settings. Among other factors, most people in SSA have a challenge of accessing and continuing to access ART care services as a result of financial constraints especially in a patriarchal African setting where women aren’t that financially empowered enough as opposed to men. Finances among HIV positive women aid in accessing the health facility in order to adhere to clinical appointments, live recommended dietary lifestyles compatible with their antiretroviral drugs and afford basic healthcare packages whenever they are referred to seek specialty care outside the HIV/AIDS primary care facility. These aspects encourage people to remain retained in a specific ART facility. Some of the factors responsible for these financial challenges limiting retention in care among women accessing ART services include; dependence on spouse for finances (especially challenging when disclosure of HIV status hasn’t occurred), competing life activities (especially for pregnant women), expensive and unreliable transportation and insufficient insurance among others. (Yehia, Stewart et al. 2015)

The consequences associated with poor retention in HIV care include; non-adherence to clinic appointments and ARV medication due to personal shortages of stock. This eventually culminates into increased morbidity of opportunistic infections (OIs), drug resistance and eventually mortality. These repercussions are not only personally inflicting in terms of social consequences of life loss to the immediate family but also detrimental to the public with regard
to increased health cost in managing OIs and drug resistance, and increased new infection rates as a result of uncontrolled viral load count among the HIV infected. The Ugandan Ministry of Health targets are equally as ambitious as the UNAIDS 90; 90; 90 targets: their 2015/2016–2019/2020 National HIV and AIDS Strategic Plan sets the goal of a 70% reduction in adult HIV incidence by 2020 (Uganda AIDS. Commission, 2015). To achieve these goals, ART coverage in Uganda will need to increase dramatically over the next few years.

In LMICs, selected approaches to reducing loss at every stage of the HIV treatment cascade include decentralization of services and task-shifting aspects of care to nurses and to nonclinical staff, including lay counselors who may be patients themselves. These approaches have been found to be feasible, effective, and result in good clinical outcomes (Cohen R, 2009). Such facility-based strategies, however, are reaching their limits as increasing numbers of patients, initiate ART. Recently, suggestions have been made to expand accessible and flexible community-based ART service delivery, differentiating the needs of clinically ill patients starting ART or in need of significant adherence counseling from the needs of clinically stable patients with documented optimal ART adherence (Bedelu M, 2007)

The concept of using Savings and Credit Cooperative Organizations (SACCOs), which are growing financial organizations at household or community level to aid access health care in most resource limited settings is new. SACCOs might generally be chosen over banks because of their lower interest rates, higher returns on deposits, local investment opportunities, lower insurance premiums, faster cash reserve build and exciting partner discounts among other benefits. Other than their objective to empower community members to achieve socio-economic goals at grassroots level, the inclusion of health access becomes fundamental. (Adea 2015, Nnyanja 2017). Access to good healthcare services in the long run improves labor productivity which eventually leads to poverty eradication among members through a group support strategy (Bassett, Wilson et al. 2015). The utilization of SACCOs has for long been viewed for direct social and economic developmental transformations, however, its application in attaining health related goals and specifically ART targets has not been exploited that much but their financial objectives can act as the more stable financial incentives a number of HIV positive women look for. In Uganda, there are over 10,000 known SACCOs majority of which are located in central region. Their key objective is socio-economic empowerment at household level(Ahimbisibwe 2009).
1.2 Problem Statement

Interventions in terms of health promoting financial incentives to support HIV care have been studied and implemented in certain resource limited settings (Bassett, Wilson et al. 2015). These were geared at influencing health decision making, as they provide certain and near-immediate rewards for health promoting behaviors. Financial incentives can also potentially increase use of health services by offsetting real costs that may come from seeking healthcare such as those of travel or missed work. However, the sustainability beyond the incentive period is questionable. This is where the role of SACCOs with the objective of financial independence focused on retention in HIV care comes in. This study seeks to provide information vital in the rolling out of financial cooperatives among women accessing HIV care by understanding the impact it has on retention.

1.3 Main objective;

To investigate the impact of SACCOs on retention in HIV care among women accessing ART services

1.4 Research Question

Do SACCOs improve retention in HIV care among women accessing ART services?

1.5 Justification/Significance

Not much is known about the effect of financial stability, access and retention to ART care yet socio-economic empowerment with the objective of routine access and hence retention on ART among women is vital. This shall ensure adherence to clinic appointments, to the ARVs which sometimes necessitates a switch of type of ARV drug taken depending on an individual’s drug response and thus translate into sustained viral suppression and aid to achieve not only the UNAIDS 90; 90; 90 fast track targets (90% of PLHIV knowing their HIV status, 90% of those knowing their HIV status on treatment, and 90% of those on HIV treatment virally suppressed). (UNAIDS 2014) but also the Ugandan Ministry of Health ART targets earlier mentioned.

Once key knowledge on the effect of finances and retention into HIV care is established, such information shall strengthen the rollout of ART programs to have an economic empowering
element for members. This in the long run will promote socio-economic livelihood as well as improve access and retention to HIV/AIDS care.

1.6 Study Scope

The study will be conducted among women accessing ART care in Kampala Capital City Authority (KCCA) health facilities in Kampala and will review their health records for a period of one year. The study shall explore socio-economic, demographic and clinical characteristics of women for a period of a year since initiation of ART.

This study acts as a pilot for the good understanding of the role of SACCOs in an area where economic stability is fundamental for the access of key social services. Hence the greatest impact/benefit of application of study findings is an urban setting such as the study sites.

1.7 Organization of the report

The report is organized into five chapters. The Introductory chapter, Chapter 1, gives a preamble and background to the role of finances in HIV/AIDS care retention among women. It further gives perspective to this issue in the context of Uganda relative to the rest of the world.

Chapter 2, the Literature Review, provides similar information researched in the area of HIV care retention, the role of SACCOs and other similar financial incentives or services.

Chapter 3, the Research Methodology, provides aspects on the research design, methods of data collection and analysis for all data collected.

Chapter 4, the Presentation, Interpretation and Discussion of study findings, systematically provides the results obtained from the interviews presented and analyzed in tables, pie charts, graphs, cross tabulation and a regression model.

Finally, chapter 5, the Summary, Conclusions and Policy recommendations section, gives a brief overview of the study and draws on the findings to derive key recommendations for stakeholders and implementing partners.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter situates the study in the context of previous research and scholarly material pertaining to the topic, presents a critical synthesis of empirical literature according to relevant themes or variables, justifies how the study addresses a gap or problem in the literature, and outlines the theoretical or conceptual framework of the study.

2.1 HIV/AIDS care and retention into Care

The remarkable expansion of access to antiretroviral therapy (ART) for HIV/AIDS in resource-constrained countries has given nearly four million HIV-positive adults in sub-Saharan Africa the opportunity to achieve what for many may be nearly normal life expectancies (WHO 2010). Others, however, do not make it past their first year on treatment. The rate of early mortality and loss to follow-up, which itself portends mortality for many, averages 23% across the region (Fox and Rosen 2010). For patients initiating ART late, with very low CD4 counts, the odds of success are even lower: in a pooled analysis of data from multiple resource-limited countries, patients with starting CD4 counts below 25 cells/mm$^3$ faced a more than 3-fold increased risk of death compared to those with starting CD4 counts above 50 cells/mm$^3$ [3]. Those who survive suffer more morbidity and utilize more medical care resources than would otherwise have been necessary (Leisegang, Cleary et al. 2009).

Earlier initiation of ART requires earlier diagnosis and regular monitoring until treatment eligibility. Despite large-scale HIV testing campaigns to hasten diagnosis and the raising of CD4 count thresholds to allow earlier ART eligibility, late presentation for AIDS treatment remains the norm (K 2010, WHO 2010). Median baseline CD4 counts have increased only modestly in the years since treatment became available, and most programs still report medians well below even the very low threshold of 200cells/mm$^3$ previously allowed by most treatment guidelines (2008, Fox and Rosen 2010). Studies of retention in pre-ART care report substantial loss of patients at every step, starting with patients who do not return for their initial CD4 count results and ending with those who do not initiate ART despite eligibility. Better health information systems that allow patients to be tracked between service delivery points are needed to properly evaluate pre-ART loss to care, and researchers should attempt to standardize the terminology, definitions, and time periods reported (Rosen and Fox 2011).
2.2 Factors associated with HIV/AIDS and Antiretroviral therapy care

A systematic literature review observed that in developed countries, the most frequently cited predictors of poor retention were active substance use and demographic factors whereas in developing countries, physical health factors were most frequently associated with poor retention in care. The results from this review suggest primary concerns for poor retention include substance use and physical health factors. Other psychosocial factors, such as psychiatric illness and social/welfare factors, were also found to be relevant. (Bulsara, Wainberg et al. 2018)

In resource-limited settings—where a massive scale up of HIV services has occurred in the last 5 years—both understanding the extent of and improving retention in care presents special challenges. First, retention in care within the decentralizing network of services is likely higher than existing estimates that account only for retention in clinic, and therefore antiretroviral therapy services may be more effective than currently believed. Second, both magnitude and determinants of patient retention vary substantially and therefore encouraging the conduct of locally relevant epidemiology is needed to inform programmatic decisions. Third, socio-structural factors such as program characteristics, transportation, poverty, work/child care responsibilities, and social relations are the major determinants of retention in care, and therefore interventions to improve retention in care should focus on implementation strategies. Research to assess and improve retention in care for HIV-infected patients can be strengthened by incorporating novel methods such as sampling-based approaches and a causal analytic framework. (Geng, Nash et al. 2010)

Individual level barriers to retention in care included side effects, gaining weight, belief in faith healing, and use of herbal remedies and alcohol. Interpersonal barriers such as stigma and nondisclosure of HIV status were reported. At the institutional level, inadequate space in the clinic, long waiting times, long travel distances, and shortage of third-line drugs presented barriers to retention in care. Food shortages and patient mobility were reported as community barriers to retention in care. The ecological framework conceptualizes the complex and dynamic factors affecting retention in ART care and highlights the need for multifaceted interventions that combine health education, disease management, and opportunities for income generation in a socially responsive and accountable environment (Mukumbang, Mwale et al. 2017).

Health behaviors such as retention in HIV medical care and adherence to antiretroviral therapy (ART) pose major challenges to reducing new HIV infections, addressing health disparities,
improving health outcomes. Andersen's Behavioral Model of Health Service Use provides a conceptual framework for understanding how patient and environmental factors affect health behaviors and outcomes, which can inform the design of intervention strategies. Factors affecting retention and adherence among persons with HIV include patient predisposing factors (e.g., mental illness, substance abuse), patient-enabling factors (e.g., social support, reminder strategies, medication characteristics, transportation, housing, insurance), and healthcare environment factors (e.g., pharmacy services, clinic experiences, provider characteristics). Evidence-based recommendations for improving retention and adherence include (1) systematic monitoring of clinic attendance and ART adherence; (2) use of peer or paraprofessional navigators to re-engage patients in care and help them remain in care; (3) optimization of ART regimens and pharmaceutical supply chain management systems; (4) provision of reminder devices and tools; (5) general education and counseling; (6) engagement of peer, family, and community support groups; (7) case management; and (8) targeting patients with substance abuse and mental illness. Further research is needed on effective monitoring strategies and interventions that focus on improving retention and adherence, with specific attention to the healthcare environment (Holtzman, Brady et al. 2015).

Performance in retention on ART at 12 months was interpreted following the definition of HIVDR early warning indicator: excellent (>85%), fair (85-75%), poor (<75); and factors with p-value < 0.01 were considered statistically significant. Majority (74.4%) of patients was in urban settings, and 50.9% were managed in reference treatment centers. Nationwide, retention on ART at 12 months was 60.4% (2023/3349); only six sites and one region achieved acceptable performances. Retention performance varied in reference treatment centers (54.2%) vs. management units (66.8%), p < 0.0001; male (57.1%) vs. women (62.0%), p = 0.007; and with WHO clinical stage I (63.3%) vs. other stages (55.6%), p = 0.007; but neither for age (adults [60.3%] vs. children [58.8%], p = 0.730) nor for immune status (CD4351-500 [65.9%] vs. other CD4-staging [59.86%], p = 0.077). Poor retention in care, within 12 months of ART initiation, urges active search for lost-to-follow-up targeting preferentially male and symptomatic patients, especially within reference ART clinics. Such sampling strategy could be further strengthened for informed ART monitoring and HIVDR prevention perspectives (Billong, Fokam et al. 2016).

In another study in Ethiopia that was based on individual patient data from the medical records, nearly 80% (95% CI: 76.7, 82.1) of the patients were retained in care in the first 3 and half years
of antiretroviral therapy. After successfully tracing more than half of the LTFU patients, the updated one-year retention in care estimate became 86% (95% CI: 83.41%, 88.17%). In the multivariate Cox regression analyses, severe immune deficiency at enrolment in care/or at ART initiation and 'bed-ridden' or 'ambulatory' functional status at the start of ART predicted attrition. Retention in HIV care in Addis Ababa is comparable with or even better than previous findings from other resource-limited as well as EU/USA settings. However, measures to detect and enroll patients in HIV care as early as possible are still necessary (Mekuria, Prins et al. 2015).

2.3 Financial aspects affecting HIV/AIDS and Antiretroviral care among women

In a study conducted in a number of countries in South East Asia, the following barriers were identified: young age, sex work, imprisonment, transgender identity, illiteracy, rural residence, alcohol/ injecting drug use, perceived poor health status, lack of health insurance, fear of confidentiality breach, self-referral for HIV testing, and public hospital as the place of HIV diagnosis. HIV program planners should ensure easy access to HIV testing and earlier linkage to HIV care among PLHIV. In addition, multiple socio-economic and health systems barriers need to be addressed along the HIV care cascade to reach the UNAIDS 90-90-90 target in the Asia-Pacific region (Koirala, Deuba et al. 2017).

Financial incentives show promise for improving engagement in HIV testing, care, and prevention. Understanding the durability, scalability, ease of implementation, and cost-effectiveness of these different approaches will be critical for maximizing the impact of incentives in curtailing the HIV epidemic (Bassett, Wilson et al. 2015).

Another study conducted among women initiating ART post-delivery noted that to encourage HIV-positive women to remain in care, respondents most frequently suggested health education (34%), counseling (29%), financial incentives (25%), home visits (13%), and better service (6%). Results suggest financial incentives are acceptable, but women frequently expressed preference for integrated services and improved education and counseling to improve retention. Interventions exploring the feasibility and efficacy of education and counseling interventions to improve postpartum HIV care are warranted (Clouse, Mongwenyana et al. 2018).

Further consideration should be given to analyses that identify which interventions, or combinations of interventions, are most effective, cost-effective, scalable, and aligned with patient preferences for HIV care (Okeke, Ostermann et al. 2014).
2.4 Sacco and Healthcare Financing in HIV/AIDS Care

In an attempt to improve access to affordable healthcare, a number of sub-Saharan African countries adopted several models of healthcare financing, most of which have been wholly unsuccessful at reaching the poor. These healthcare financing models range from a “free health care for all” model to a fee collection at the point of service popularly referred to as cash-and-carry model. Funding for the “free health care for all” was unsustainable because governments were unable to generate sufficient tax revenues. Consequently, very limited public expenditure was dedicated to public health, particularly in the rural areas. Likewise, the “cash-and-carry” healthcare model made healthcare accessible only to those who could afford it, excluding the poor from health care utilization (Wiysonge, Paulsen et al. 2017).

Recent interventions by NGOs in the form of community based health insurance schemes or Mutual Health Organizations (MHOs) have been fairly successful in improving access to healthcare. In 2003, realizing the potential that MHOs have to increase healthcare utilization and protect people against catastrophic health expenses, the government of Ghana became the first country in Africa to set up MHOs in every district in Ghana through the National Health Insurance Act. As of January 2007, approximately seven million people (35% of the total population) have enrolled in MHO. Enrollment in MHOs is low, especially among the poor. Many, particularly those in the informal sector, still have difficulties joining MHOs due to the irregularity of their incomes. Individuals who become members of MHOs eventually abandon their memberships because of their inability to make payments on their dues and insurance premiums (Ofori-Adjei 2007).

Providing healthcare to the poor is a Herculean task; one that consumes a large portion of a government’s scarce resources, and one that businesses perceive to be commercially unviable. The challenge governments face in financing healthcare lies in their ability to create accessible and affordable healthcare systems that have scale (reach), permanence (multi-generational), and are supported by sustainable financing mechanisms. Thus, the issue of poverty and human development cannot be tackled without a critical look at innovative strategies that create an efficient, affordable, and accessible health care system. The microfinance model, by virtue of its demonstrated ability to reach the poor, is an innovative tool that can be used to improve the delivery of healthcare to the poor, particularly those in remote rural areas (Ofori-Adjei 2007).
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter situates the study within a particular methodological tradition, provides a rationale for that approach, describes the research setting, sample participants, inclusion and exclusion criteria, and describes data collection and analysis methods.

3.1 Study Design

This was a cross-sectional study design in which women accessing antiretroviral therapy were interviewed and a retrospective review of women’s treatment files over a period of 12 months was performed.

3.2 Study Setting

The study was conducted at selected Kampala Capital City Authority Health centers in Kampala district because of their urban setting and the resources available to the researcher.

3.3 Conceptual Framework

Figure 1; Conceptual Framework of relationship between factors, SACCOs and Retention in ART Care

\[
\text{HIV Care Retention} = f(\text{SACCO Member, Socio – demographics, Clinical X – tics})
\]
**SACCO Member={Socio – demographics, Clinical Characteristics}**

3.4 Study Population
Women who have been accessing HAART care for at least years were approached to participate.

3.4.1 Inclusion Criteria
All adult women aged > 18 years

3.4.2 Exclusion Criteria
The study excluded;
1. Women who did not consent
2. Women who did not make one-year accessing care at the facility.
3. Women who did not disclose their minimum earnings

3.5 Sampling Procedure

Convenient sampling was used for the women who meet the inclusion criteria after they have consented to participate in the study. This was so because patients pretty much walk in to the clinic at any time depending, this makes it hard to use certain methods such as random or consecutive sampling that are based on the sampling population being available at the time of sampling.

3.6 Sample size Estimation

The sample size was determined by the use of statistical formula below; (Heinisch 1965)

\[
 n = \frac{Z^2(pq)}{e^2}
\]

**Equation 1; Formula for Sample size determination**

Where; \(n\) = the sample size to be determined

- \(Z\) = the 1.96 the value of confidence interval
- \(P\) = the assumed Incidence rate
- \(Q\) = 1-0Incidence rate (1-\(p\))
- \(e\) = 0.05 i.e. 95% confidence interval

Hence, \(p\) the assumed rate of loss to follow up (LTFU) factored in as 26.7% as per a study by(Berheto, Haile et al. 2014). Thus;

\[
 n = \frac{1.96^2(0.267\times0.773)}{0.05^2}
\]

\[
 n= \frac{0.60355}{0.0025}, \text{ and thus } n=241.42
\]
Calculating 10% (Approx. 20) added to cater for loss to follow-up n= 260 women

The patients’ clinical notes/ charts were reviewed file notes and progress notes will be reviewed and summarized into study variables as indicated below:

3.7 Study Variables

Independent variables include; Socioeconomic, demographics and clinical Characteristics
Dependent Variables include; Loss to follow up defined as missing any clinic appointment within one year of being in ART treatment at the facility

Table 1; Variables and Means of Measurement

<table>
<thead>
<tr>
<th>Variables</th>
<th>Indicators (Means of measurement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-demographics;</td>
<td></td>
</tr>
<tr>
<td>• Age</td>
<td>Chronological age in years</td>
</tr>
<tr>
<td>• Marital status</td>
<td>Married Vs separated Vs Single</td>
</tr>
<tr>
<td>• Education level</td>
<td>Number of schooling years</td>
</tr>
<tr>
<td>• Region of Origin</td>
<td>Central Vs East Vs North Vs West</td>
</tr>
<tr>
<td>• Ethnicity</td>
<td>Tribe</td>
</tr>
<tr>
<td>• Sero-status Disclosure to Partner</td>
<td>Yes Vs No</td>
</tr>
<tr>
<td>Socio-economic</td>
<td></td>
</tr>
<tr>
<td>• Employment status</td>
<td>Employed vs Unemployed</td>
</tr>
<tr>
<td>• Income levels</td>
<td>Numerical value in UGX</td>
</tr>
<tr>
<td>• Number of dependents</td>
<td>Numerical value provided</td>
</tr>
<tr>
<td>• Job Nature</td>
<td>Categorical variables from options</td>
</tr>
<tr>
<td>Clinical Characteristics</td>
<td></td>
</tr>
<tr>
<td>• CD cell count</td>
<td>Value at initiation and latest (cell/µL)</td>
</tr>
<tr>
<td>• Viral Load</td>
<td>Value at initiation and latest (copies.ml)</td>
</tr>
<tr>
<td>• WHO Clinical staging</td>
<td>Either stage 1,2,3 or 4</td>
</tr>
<tr>
<td>• ART regimen</td>
<td>Drug combinations NNRTI and NRTI</td>
</tr>
<tr>
<td>• Comorbidity</td>
<td>Other diseases such as Hypertension etc.</td>
</tr>
<tr>
<td>• Opportunistic infections</td>
<td>AIDS related illness such as TB if any</td>
</tr>
<tr>
<td>Member of Financial SACCOs</td>
<td>Yes Vs No</td>
</tr>
<tr>
<td>Retention in Care</td>
<td></td>
</tr>
<tr>
<td>• Adherence to Scheduled Clinic Appoint</td>
<td>100 % compliance to clinic appointment</td>
</tr>
<tr>
<td>• Drug Adherence</td>
<td>As documented in treatment file</td>
</tr>
</tbody>
</table>

3.8 Data collection Instruments and Procedures

Upon obtaining written informed consent from the study participants, socioeconomic, demographic and clinical data will be obtained from the women through and interview guided questionnaire.
3.9 Quality Control
We shall development and validate the questionnaire and pre-testing of the questionnaire will be carried out. Review of data after collection to check for missing data and unclear parts, cleaning of data and counter checks on data entry will be done to ensure quality.

3.10 Data Management
Data was collected using standardized interview guided questionnaires. Data entry and verification will be done by creation of variables for data coding and assigning numerical values for quantitative analysis. Parallel data entries will be done to compare for correctness. SPSS version 20.0 statistical packages will be used to analyze the data. The program shall also be used to explore inferential statistics through;

Univariate Logistic regression; This shall test for association of each factor with women being part of a SACCO and also look at the relation between being a member of a SACCO and retention in ART care

Bi-variate Logistic regression; this shall look out for cofounding factors in those that have a strong association with being a member of a SACCO and retention in ART care.

Multivariate Logistic regression. These will aid in identifying the independent factors associated with retention of which those that have proven associated in Univariate and Bi-variate analysis will be factored in at this stage

Presentation of data: We shall present data in the form of frequency tables, pie charts, histograms, bar charts, and diagrams.

3.11 Ethical considerations
Ethical approval was sought from the department and the respective KCCA before starting this study. Women accessing HIV/AIDS care will be informed appropriately on the benefits and risks of the study in a language that they fully understand and their written consent will then be captured. Participation will be voluntary and no patient will be denied treatment whether s/he gave consent or not. The confidentiality of data will be maintained during and after the research. Those who wished to withdraw from the study will be free to do so without affecting their medical care. The research will be compiled into a thesis, which will be submitted in partial fulfilment of the Masters of Arts in Economic Policy and Planning at Makerere University.

3.12 Study Limitations
Since the study was conducted in a period of 1 month, it was envisaged that this may not capture the entire picture of the entire patient cohort at respective facilities.
3.13 Dissemination of results

A copy of the Research findings in a format of a Dissertation/Research Report was distributed to the College of Business and Management sciences, Makerere, KCCA and finally to the research supervisors. A Manuscript will be drafted and prepared for submission to reputable Health Economic Journals.
CHAPTER FOUR
PRESENTATION, INTERPRETATION AND DISCUSSION OF STUDY FINDINGS

4.0 Introduction

This chapter presents the findings of the study elaborating the key characteristics observed from the participants in the study and shows the relation all the variables have with the main independent variable, retention in HIV care in a cross tabulation format. It categorizes the results into descriptive results and regression results.

4.1 Descriptive Results

This describes the key characteristics of the participants in the study in terms of their socio-demographics, Socio-economic as well as clinical characteristics. It provides a description of the population from which conclusions pertaining to SACCO membership and retention to HIV/AIDS Care shall be drawn.

4.1.1 Socio-demographics of women accessing ART

i. Access points of women on ART in the study

Majority of the women were accessing ART care from Kisenyi (69) and the least number (17) got ART from Kisugu as is shown in the graph below.

**Figure 2; Graph showing the access care points of women on ART in the study**
*(Figures represent absolute number of participants)*

![Graph showing the access care points of women on ART in the study](image)

ii. Religious Affiliations of women accessing ART in study

A significant percentage of women accessing care where either Catholic or Protestant (63%) as compared to other religious affiliations.
iii. **Marital Status of women accessing ART in study**

Most (48.63%) of the women were married as compared to a small minority (4.28%) who were divorced as observed below.

**Figure 4; Graph Marital Status of women accessing ART**

(Figures represent absolute number of participants)

iv. **Level of education of women accessing ART in the study**

Majority of the women accessing ART in the study had either Primary (42%) of secondary (48%) education as compared to the rest.
v. Residence of women accessing ART in the study

Majority (24.12%) of the women accessing care within the health facilities in Kampala didn’t reside in Kampala as is shown below

Figure 6; Bar Graph Residence of women accessing ART in the study
(Figures represent absolute number of participants)

vi. HIV sero-status disclosure among women accessing ART in study

Majority of the women had disclosed their sero-status to either a partner or a close relative of friend (85%) as compared to those who did not disclose (15%)
Discussion: The study observed that the majority of women accessing care had mean number of three dependents who were less than 18 years of age, most attended up to primary and secondary education, were married, self-employed and accessing treatment from outside Kampala. This demographic is quite different from a study in America among women who were more likely to be single, and had no children less than 18 years of age, had health insurance, a high school degree or higher, were stably housed, and unemployed (Bassett, Wilson et al. 2015)

4.1.2 Socio-economic characteristics of women accessing ART

i. Number of dependents of women accessing ART in study

The mean number of dependents was 3.408 SD±2.09 (0-12)

ii. Monthly average income of women accessing ART in study

As can be seen on the next page, the majority of women earned between 50,000-250,000/=
iii. Employment status of women accessing ART in study

Majority (39.06%) of the women accessing ART were self-employed with small business/start-ups.

**Figure 9; Employment status of women accessing ART in study**

(Figures represent absolute number of participants)

![Employment status of women accessing ART in study](image)

iv. SACCO Membership of women accessing ART in study

Most of the women (72%) are not part of any SACCO and opposed to 28% who subscribed as shown below.

**Figure 10; SACCO Membership among women accessing ART in study**

(Figures represent absolute number of participants and their percentage shares)

![SACCO Membership among women accessing ART in study](image)

Of the women who had SACCO membership, the reason most attributed to doing so was enhancing a saving culture (50.7%) as is shown in table below.
Table 2; Showing benefits women provided for being a SACCO Member

<table>
<thead>
<tr>
<th>Benefits of SACCO Membership</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better services to members</td>
<td>4(4.63)</td>
</tr>
<tr>
<td>Cheap Interests on Loans</td>
<td>12(16.9)</td>
</tr>
<tr>
<td>Easy procurement of Goods and service</td>
<td>7(9.86)</td>
</tr>
<tr>
<td>General Financial Independence</td>
<td>10(14.08)</td>
</tr>
<tr>
<td>High returns on Investment</td>
<td>2(2.82)</td>
</tr>
<tr>
<td>Saving Culture</td>
<td>36(50.7)</td>
</tr>
</tbody>
</table>

**Discussion:** About 28% of women accessing ART services were part of a SACCO, 39% were self-employed, and more that 75% earned between 50,000-500,000/= per months. These results reflect the state of financial dependence most of our women are still in. The few who were part of a SACCO stated that the major benefit being having a credit line to access money fast and cheaply (38%).

4.1.3 Clinical characteristic of women accessing ART

   i. *Baseline and Latest Viral load of women accessing ART in study*

Bar Graph showing Baseline as compared to Latest Viral Load Values of women accessing ART in study.

Please Note that the viral load depicts the HIV Viral load burden a patient is faced with. The higher the viral load count (i.e. > 1000 copies per ml), the more at risk the patient is of suffering from HIV/AIDS defining illnesses. However, the lower the viral load count (i.e. < 1000 copies per ml); the less likely one is at risk of HIV AIDS defining illnesses.

**Figure 11; Graph showing baseline and Latest Viral load**

*Figures represent absolute number of participants*
ii. **Baseline and Latest CD 4 cell count Values of women accessing ART in study**

Bar Graph showing Baseline as compared to Latest CD4 cell count Values of women accessing ART in study

**Figure 12; Graph showing Mean baseline and Latest CD4 values**

*(Figures represent average CD4 counts of both baseline & latest CD4 tests taken for the participants)*

![Graph showing Mean baseline and Latest CD values](image)

**Note:** The lower the CD4 count the more one is at risk of developing a series of opportunistic infections; at any CD4 count (the risk of TB is higher in HIV positive people. this can occur at any CD4 count, Kaposi’s sarcoma (KS) can occur at any CD4 count, though the risk increases as the CD4 count drops below 350-500.). CD4 count below 300 (Diarrhea from bacterial infections microsporidia and cryptosporidium, skin problems – candida (thrush), dry skin, etc.). CD4 count below 200 (PCP (fungal pneumonia) and chest infections, toxoplasmosis – parasitic infection that can cause brain lesions). CD4 count below 100 (MAI /MAC (mycobacterium avium complex) – bacterial infections similar to Tuberculosis TB, Cryptococcus – fungal infection that can cause meningitis in the brain and PCP-like symptoms in the lungs). CD4 count below 50 (CMV (cytomegalovirus) – a viral infection that can cause permanent vision loss and blindness and can also affect other organs)

iii. **Baseline and Latest WHO Clinical staging of women accessing ART in study**

Bar Graph showing Baseline as compared to Latest WHO Clinical stage of women accessing ART in study
Figure 13; Graph Showing baseline and Latest WHO Clinical staging

(Figures represent absolute number of participants per WHO clinical staging)

iv. Proportion of women with other chronic illness accessing ART in study

Pie-chart sowing proportion of women accessing ART services in Study with Chronic illness

Figure 14; Pie-Chart showing Proportion of women with other chronic illness

(Figures represent absolute number of participants and their percentage shares)

Discussion: Most of the women showed a generally improved trend in Outcomes of ART as demonstrated by increased CD 4 cell count and decreased viral load as compared at Baseline and latest values. This is consistent with various studies across African that have demonstrated the same (Blank, Fletcher et al. 2015).

Also a small composition of the women has chronic illness such as diabetes, and hypertension (9%). This is as well comparable to studies across Africa in a similar setting were the prevalence
of hypertension was 11.6% (Nduka, Stranges et al. 2016, Rodriguez-Arboli, Mwamelo et al. 2017).

**4.1.4 Retention in HIV Care of women accessing ART**

   *i. Frequency of Clinic appointments of women accessing ART in study*

Majority (64.2%) of the women had clinic appointments that were at least between 1 and 2 months apart as is shown in the graph below.

**Figure 15; Graph showing the frequency of clinic appointments**

*(Figures represent absolute number of participants per scheduled clinical visit)*

![](image)

   *ii. Proportion of women accessing ART who have missed a Clinic Appointment*

About half (51%) of the women accessing ART have missed clinic appointments as per self-reports.

**Figure 16; Proportion of women accessing ART who have missed a Clinic Appointment**

*(Figures represent absolute number of participants and their percentage shares)*

![](image)
iii. *Reasons for missed a Clinic Appointment as per women accessing ART*

Majority of the women attributed lack of transport (17.5%), and fear of side effects (18.68%) as the reason for missing clinical appointment

**Table 3; Reasons for missing Clinic Appointment**

<table>
<thead>
<tr>
<th>Reasons for missing Clinic Appointment</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief in God's Healing</td>
<td>2(2.2)</td>
</tr>
<tr>
<td>Fear of side effects</td>
<td>17(18.68)</td>
</tr>
<tr>
<td>Lack of Food</td>
<td>7(7.69)</td>
</tr>
<tr>
<td>Lack of general financial support</td>
<td>14(15.38)</td>
</tr>
<tr>
<td>Lack of moral support</td>
<td>7(7.69)</td>
</tr>
<tr>
<td>Lack of transport to facility</td>
<td>16(17.58)</td>
</tr>
<tr>
<td>Non-disclosure to partner/relative</td>
<td>9(9.89)</td>
</tr>
<tr>
<td>Travelled for a function (burial etc.)</td>
<td>19(20.88)</td>
</tr>
</tbody>
</table>

iv. *Level of retention over the last 12 months of women accessing ART*

Majority of the women (88%) have been retained in care over the last 12 months, however a significant 12% have been missing clinical appointments over the same period

**Figure 17; Graph showing retention in care over the last 12 months**

(Figures represent absolute number of participants and their percentage shares)
v. **Factors associated with Retention in HIV Care over the last 12 months among women**

There was no evidence of effect modification for any of the variables using the Mantel Hansel test of homogeneity. Therefore, we conclude there is no interaction between the main exposure and potential confounders. Variable with 10% difference from Mantel Hansel overall Odd ratios of Member of Sacco (main exposure (2.82)) were selected for to be included in the adjusted model. And these include Site (2.12), education level (2.6), employment (3.35), history of chronic disease (3.18), clinic schedule (2.56), latest viral load (1.47), distance from home (2.54), who stage (4.61), and age group (3.04). Only confounders, which had an overall significant effect on the retention (p=0.047), when included in the adjusted model were finally considered and their crude Odds ratios and Adjusted Odds presented below. And these include member of SACCO, history of chronic disease and patient’s age (age group).

**Discussion:** Majority of the women were retained in care (88%) of the last 12 months accessing ART care. This agrees with certain studies in a similar setting, in which retention was observed to be above 70% especially in women populations (Bulsara, Wainberg et al. 2018). This can be attributed to the fact that we are dealing with women who are more sensitive to health issues and interventions as opposed to men.

**4.2 Inferential (Regression) Results**

This presents inferential statistics trying to demonstrate the association between the different variables i.e. socio-demographic, socio-economic and clinical characteristics of the women accessing HIV/AIDS services and retention into HIV care. Different levels of statistical analysis where run starting with a Bivariate Logistic regression model shown in table 4 below and then a multivariate logistic regression model to further control for confounding variables. Data is presented in percentages, 95% ORs and p-values to draw any significant variables with a p-value set at p<0.05 to be reflective of significance.

**Table 4; Showing relationship between variables and retention in HIV/AIDS care**

The cross tabulation below is aimed at testing the relationship between each of the variables in the study and retention in HIV/AIDS care over 12 months. 4 variables are observed as statistically significant although at different levels; health facility at a1% significance level, residence (division) at5% and both SACCO membership and the latest viral load count at 10%.
(The varying totals are due to missing responses from some participants)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Retained</th>
<th>Not retained</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Facility (n=248)</td>
<td>Total=218</td>
<td>Total=30</td>
<td></td>
</tr>
<tr>
<td>Kisenyi HC IV</td>
<td>57(26%)</td>
<td>12(40%)</td>
<td>0.0017</td>
</tr>
<tr>
<td>Kiswa HC III</td>
<td>37(17%)</td>
<td>2(7%)</td>
<td></td>
</tr>
<tr>
<td>Kisugu HC III</td>
<td>14(6%)</td>
<td>3(10%)</td>
<td></td>
</tr>
<tr>
<td>Komamboga HC III</td>
<td>27(12%)</td>
<td>3(10%)</td>
<td></td>
</tr>
<tr>
<td>Kawaala HC III</td>
<td>38(17%)</td>
<td>10(33%)</td>
<td></td>
</tr>
<tr>
<td>Kitebi HC III</td>
<td>45(22%)</td>
<td>0(0%)</td>
<td></td>
</tr>
<tr>
<td>Education (n=246)</td>
<td>Total=216</td>
<td>Total=30</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>93(43%)</td>
<td>13(43%)</td>
<td>0.845</td>
</tr>
<tr>
<td>Secondary</td>
<td>107(50%)</td>
<td>15(50%)</td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>5(2%)</td>
<td>0(0%)</td>
<td></td>
</tr>
<tr>
<td>No Formal Education</td>
<td>11(5%)</td>
<td>2(7%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity (n=254)</td>
<td>Total=224</td>
<td>Total=30</td>
<td></td>
</tr>
<tr>
<td>Muganda</td>
<td>121(54%)</td>
<td>17(58%)</td>
<td>0.667</td>
</tr>
<tr>
<td>Munyankole</td>
<td>30(13%)</td>
<td>2(7%)</td>
<td></td>
</tr>
<tr>
<td>Musoga</td>
<td>16(7%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Mukiga</td>
<td>3(1%)</td>
<td>2(7%)</td>
<td></td>
</tr>
<tr>
<td>Iteso</td>
<td>5(2%)</td>
<td>0(0%)</td>
<td></td>
</tr>
<tr>
<td>Langi</td>
<td>3(1%)</td>
<td>0(0%)</td>
<td></td>
</tr>
<tr>
<td>Acholi</td>
<td>3(1%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Lugbara</td>
<td>4(2%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Munyoro</td>
<td>8(4%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Mugisu</td>
<td>7(3%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>24(12%)</td>
<td>4(13%)</td>
<td></td>
</tr>
<tr>
<td>Marital status (n=252)</td>
<td>Total=222</td>
<td>Total=30</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>39(18%)</td>
<td>5(17%)</td>
<td>0.750</td>
</tr>
<tr>
<td>Married</td>
<td>108(48%)</td>
<td>16(53%)</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>16(7%)</td>
<td>3(10%)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>11(5%)</td>
<td>0(0%)</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>48(22%)</td>
<td>6(20%)</td>
<td></td>
</tr>
<tr>
<td>Religion (n=253)</td>
<td>Total=223</td>
<td>Total=30</td>
<td>0.482</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>Catholic</td>
<td>72(33%)</td>
<td>8(27%)</td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>65(29%)</td>
<td>13(43%)</td>
<td></td>
</tr>
<tr>
<td>Muslim</td>
<td>52(23%)</td>
<td>5(17%)</td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td>3(1%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>31(14%)</td>
<td>3(10%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residence (n=255)</th>
<th>Total=225</th>
<th>Total=30</th>
<th>0.045</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>21(9%)</td>
<td>3(10%)</td>
<td></td>
</tr>
<tr>
<td>Nakawa</td>
<td>29(13%)</td>
<td>2(7%)</td>
<td></td>
</tr>
<tr>
<td>Makindye</td>
<td>33(15%)</td>
<td>11(37%)</td>
<td></td>
</tr>
<tr>
<td>Rubaga</td>
<td>46(20%)</td>
<td>7(23%)</td>
<td></td>
</tr>
<tr>
<td>Kawempe</td>
<td>38(17%)</td>
<td>4(13%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>58(26%)</td>
<td>3(10%)</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sero-status Disclosure (n=255)</th>
<th>Total=225</th>
<th>Total=30</th>
<th>0.391</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>189(84%)</td>
<td>27(90%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>36(16%)</td>
<td>3(10%)</td>
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</table>

<table>
<thead>
<tr>
<th>SACCO Member (n=255)</th>
<th>Total=225</th>
<th>Total=30</th>
<th>0.054</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>68(30%)</td>
<td>4(13%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>157(70%)</td>
<td>26(87%)</td>
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</table>

<table>
<thead>
<tr>
<th>Monthly Income (n=175)</th>
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<th>Total=18</th>
<th>0.901</th>
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</thead>
<tbody>
<tr>
<td>&lt; 50,000</td>
<td>30(19%)</td>
<td>4(22%)</td>
<td></td>
</tr>
<tr>
<td>50,001-100,000</td>
<td>40(25%)</td>
<td>6(34%)</td>
<td></td>
</tr>
<tr>
<td>100,001-250,000</td>
<td>42(27%)</td>
<td>4(22%)</td>
<td></td>
</tr>
<tr>
<td>250,001-500,000</td>
<td>42(27%)</td>
<td>4(22%)</td>
<td></td>
</tr>
<tr>
<td>&gt; 500,001</td>
<td>3(2%)</td>
<td>0(0%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment status (n=254)</th>
<th>Total=224</th>
<th>Total=30</th>
<th>0.169</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>14(6%)</td>
<td>1(3%)</td>
<td></td>
</tr>
<tr>
<td>Informal</td>
<td>63(28%)</td>
<td>7(24%)</td>
<td></td>
</tr>
<tr>
<td>Self-employed</td>
<td>81(36%)</td>
<td>18(60%)</td>
<td></td>
</tr>
<tr>
<td>Unemployed Searching</td>
<td>47(21%)</td>
<td>4(13%)</td>
<td></td>
</tr>
<tr>
<td>Unemployed Not searching</td>
<td>17(8%)</td>
<td>0(0%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>2(1%)</td>
<td>0(0%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of dependents (n=255)</th>
<th>Total=225</th>
<th>Total=30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3</td>
<td>Greater than 3</td>
<td>Total=36</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td>123(55%)</td>
<td>18(60%)</td>
<td>26(72%)</td>
</tr>
<tr>
<td>102(45%)</td>
<td>12(40%)</td>
<td>10(28%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Latest Viral Load (n=44)</th>
<th>&lt; 1000 copies/ml</th>
<th>&gt; 1000 copies/ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total=212</td>
<td>Total=222</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Monthly</td>
<td>60(27%)</td>
</tr>
<tr>
<td></td>
<td>2 monthly</td>
<td>78(35%)</td>
</tr>
<tr>
<td></td>
<td>3 Monthly</td>
<td>67(30%)</td>
</tr>
<tr>
<td></td>
<td>&gt; 3 monthly</td>
<td>17(8%)</td>
</tr>
<tr>
<td>No</td>
<td>Monthly</td>
<td>9(30%)</td>
</tr>
<tr>
<td></td>
<td>2 monthly</td>
<td>11(37%)</td>
</tr>
<tr>
<td></td>
<td>3 Monthly</td>
<td>9(30%)</td>
</tr>
<tr>
<td></td>
<td>&gt; 3 monthly</td>
<td>1(3%)</td>
</tr>
</tbody>
</table>

The first statistically significant variable is the health facility which is key as HIV positive patients like any other patient normally have preferences for where they get their treatment. It can be seen above that Kisenyi HC IV has the highest percentage (26%) of participants who were retained in HIV care which can be attributed to the virtue of its level, IV that implies it has the most comprehensive HIV services offered compared to a level III health facility. On the flip side, it also has the highest percentage (40%) of participants who were not retained which can probably be explained by the fact that it has the highest patient volume compared to the other 5 health facilities.

Second is the residence of the participant which in this study is defined as the division. It was observed that majority of the participants who were retained actually came from outside of Kampala as represented by the Others section (26%). Further observations from the individual responses showed that majority of the Others section were Wakiso sub-counties. This can be attributed to the fact that the issue of stigma is still very existent. Most HIV patients would rather get their treatment from a different community (however far) where they are not known for fear of discrimination in the community where they are known. On the other hand, Makindye division scored the highest percentage (37%) of participants who were not retained. This can be cause for investigation through further research.
Third is the SACCO membership. Participants who were not members of any SACCO scored the highest percentages of those either retained or not retained, 70% and 87% respectively in HIV/AIDS care. One might be led to believe that being a member of a SACCO has no relationship with retention in HIV/AIDS care but by virtue of its significance level 0.054, there is a relationship worth further investigating as will be seen in the regression model that follows.

Lastly, the fourth significant variable seen above is the latest viral load count. It was observed that participants with a count of <1000 copies/ml of blood had the highest percentage (72%) of retention in HIV/AIDS care and the reverse is true with a percentage of 62% for those not retained and with a viral load count of >1000 copies/ml of blood. This is consistent with the fact that the less treatment an HIV positive patient seeks (low retention in HIV care), the more of the virus in their body (>1000copies/ml)

**Table 5; Factors associated with retention in HIV/AIDS care**

The table below shows an empirical analysis carried out of the relationship between the variables in the study and retention in HIV care using the logit model. 3 variables are observed as statistically significant at 90% Confidence Interval (CI); the age of 35-44 years, being a member of a SACCO and being unemployed.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Unadjusted OR (90% C.I)</th>
<th>P-value</th>
<th>Adjusted OR (90% C.I)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from home to facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5Km</td>
<td>1</td>
<td>0.145</td>
<td>0.66(0.13-3.28)</td>
<td>0.615</td>
</tr>
<tr>
<td>&gt; 5Km</td>
<td>1.37(0.34-5.55)</td>
<td></td>
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<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>0.54(0.12-2.50)</td>
<td>0.413</td>
<td>0.66(0.13-3.28)</td>
<td>0.615</td>
</tr>
<tr>
<td>35-44</td>
<td>0.28(0.06-1.37)</td>
<td>0.117</td>
<td>0.22(0.044-1.10)</td>
<td>0.064</td>
</tr>
<tr>
<td>45-54</td>
<td>0.33(0.05-2.20)</td>
<td>0.254</td>
<td>0.29(0.0424-1.97)</td>
<td>0.206</td>
</tr>
<tr>
<td>&gt; 55</td>
<td>0.69(0.056-8.34)</td>
<td>0.769</td>
<td>0.59(0.05-7.44)</td>
<td>0.687</td>
</tr>
<tr>
<td>Education</td>
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</tr>
<tr>
<td>No Formal Education</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>2.49(0.51 - 12.19)</td>
<td>0.870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>2.42(0.50 -11.54)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>2.64(0.87 - 7.99)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kisenyi</td>
<td>2.93(0.33- 25.85)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiswa</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kisugu</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Komamboga</td>
<td>0.46(0.03 - 6.43)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kawaala</td>
<td>Kitebi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------</td>
<td>-------------------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>1.43(0.25- 8.06)</td>
<td>2.12(0.71 - 6.39)</td>
<td>0.5360</td>
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</tr>
<tr>
<td>Member of SACCO</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>2.82(0.95-8.38)</td>
<td>0.063</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of dependents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 3</td>
<td>7.03(0.86-57.17)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>&gt; 3</td>
<td>1.37(0.35-5.44)</td>
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<tr>
<td>Employment</td>
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<tr>
<td>Employed</td>
<td>1</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.97(0.55-7.14)</td>
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<tr>
<td>HIV Sero status disclosure</td>
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</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2.78(0.92- 8.37)</td>
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<td></td>
<td></td>
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<tr>
<td>Viral Load</td>
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<tr>
<td>&gt;1000 copies/ml</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1000 copies/ml</td>
<td>1.467(0.11 -19.20)</td>
<td></td>
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<tr>
<td>History of Chronic disease</td>
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</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>0.429(0.131-1.401)</td>
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<td>0.161</td>
<td>1</td>
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<tr>
<td>Income per month</td>
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<td>&lt; 50000</td>
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<tr>
<td>50000-100,000</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100,001-250,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250,001-500,000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>&gt; 500,001</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Clinic Appointments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 monthly</td>
<td>1.55(0.30-7.88)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 monthly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 3 month</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly</td>
<td>1.6(0.18-14.52)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results seen above, the first statistically significant variable is the age category of 35-44 years (p value=0.064). This majorly constitutes of the adult working class who are probably able to meet their health demands like continuous engagement in appropriate medical care and are mature enough to stigmatize less.

Secondly, members of a SACCO were 3 times more likely to be retained (p value=0.054) compared to non-SACCO members. This can be attributed to the fact that the major aim of SACCOs is to provide financial stability for its members so they can be economically empowered to meet all their changing health demands among others. This is consistent with one
study in South Africa which noted that women demanded financial incentives to remain in care (Clouse, Mongwenyana et al. 2018).

Thirdly, it was surprisingly observed that participants who were unemployed were more likely to be retained in HIV care this could be attributed to the fact that majority of the employed participants were self-employed which in its nature, usually requires a lot of time investment by the owner hence easily missing clinic appointments as opposed to their counterparts who may be dependents on their spouse’ or relative’s source of income.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.0 Introduction

This chapter concludes the report by giving a summary of the overall findings, conclusions drawn from these findings and policy recommendations that can help improve female retention in HIV care for women. The scope of the following conclusions is limited to the KCCA health facilities in Kampala.

5.1 Summary of Findings/Results

The objective of the study was to investigate the role of SACCOs in improving retention in HIV care specifically for women in Kampala and the KCCA health facilities were my case study. This research was intended to explore whether there exists a link between financial incentives and HIV retention in care.

The results showed that most of the women accessing ART are married (48.7%), from outside Kampala district (24%) and self-employed (38.9%). Only 28% of the women had SACCO membership. Majority (65.9%) were virologically suppressed and their mean CD4 cell count was 565 cells/µL. Retention in ART care was at 88% in the last 12 months and had no direct association with having SACCO membership as per adjusted Multivariate Logistic regression (AOR 3.466, 95% C.I (0.980-12.250), p-value=0.054); however, members of a SACCO were 3 times more likely to be retained compared to non-SACCO members. Patients with History of Chronic Diseases were 50% less likely to be retained compared to those who did not have history of chronic diseases after adjustment.

5.2 Study Conclusions

1. Retention in Care is high; however, a significant proportion of women continue to be non-compliant to clinic appointments. The economically viable reason deterring retention is lack of transport to the facility at the time for the scheduled clinic visit among other reasons. A major factor that contributes to retention is SACCO Membership observed from the 3 times likelihood of retention as opposed to non-SACCO members.

2. SACCO Membership is still low (28%) among women accessing ART care. The implied reason for this may be attributed to the fact that most women own small startup businesses and require running capital to maintain this economic activity. So rather than having membership in a SACCO they would rather grow their business franchise.
3. Financial limitations continue to be a major deterrent to retention in HIV care among women as one of the noted reasons for defaulting on a clinic appointment schedule was the lack of money for transportation to the facility.

4. Most women agree to the fact that accessing financial resources could improve timely access and compliance to clinic appointments as transport is a main limitation. This demonstrates that if programs geared towards socio-economic empowerment of such populations are embarked on, then retention in care is a given especially as we target to achieve the 90; 90; 90 UNAIDS target mentioned in the introduction of the report.

5.3 Policy Recommendations

Drawing from the findings that state the association between financial independence and the increased likelihood of retention, HIV/AIDS care programs through the Ministry of Health, especially Non-Government Organizations (NGOs), should integrate financial education and empower women to establish small savings groups whose goal is geared towards socio-economic transformation for health care access. This is pivotal as the nation looks towards moving away from donor funded HIV/AIDS programs since donor funds more often than not, have conditions to be met, some of which are unfavorable. An increase in retention of HIV patients on HIV care implies a suppression of the HIV virus which in turn, implies a reduction in the HIV incidence hence less new HIV infections. This is geared towards achieving the 90;90;90 United Nations Program on HIV/AIDS (UNAIDS) objective of eliminating HIV/AIDS by 2030; 90% of PLHIV knowing their HIV status, 90% of those knowing their HIV status on HIV treatment, and 90% of those on HIV treatment virally suppressed.
REFERENCES


in Bangladesh, Indonesia, Lao, Nepal, Pakistan, Philippines and Vietnam."  *PloS one* 12, e0176914 DOI: 10.1371/journal.pone.0176914.


APPENDIX I

QUESTIONNAIRE

Dear respondent, my name is Lynda Namukwaya a student of Makerere University pursuing a Master of Arts degree in Economic Policy and Planning. I am conducting research on the role of Savings and Credit Cooperative Organisations (SACCOs) in improving female retention in HIV/AIDS care in Uganda, specifically in the Kampala Capital City Authority (KCCA) health facilities in Kampala. I kindly request you to spare some time and fill this questionnaire so that I can accomplish this task. I will keep this data confidential and use it strictly for academic purposes only. The questions require filling in short answers or ticking (□) the most appropriate options. I am grateful for your assistance.

Participant Number …………

SOCIO-DEMOGRAPHICS

1. Age (yrs.): ………………

2. Marital status:
   - Single (never married) □ Married (or in a domestic partnership) □ Widowed □
   - Divorced □ Separated □

3. Level of education:
   - Primary □ Secondary □ University □ Tertiary □ No formal education □

4. Religion:
   - Catholic □ Protestant □ Muslim □ Traditional □ Other…………………..

5. Ethnic tribe:
   - Muganda □ Munyankole □ Musoga □ Mukiga □ Iteso □ Langi □
   - Mugisu □ Acholi □ Lugbara □ Munyoro □ Other ……………………. 

6. Residence:
   - Central □ Nakawa □ Makindye □ Rubaga □ Kawempe □ Mulago □

7. Disclosed HIV status to partner or close relatives?
   - Yes □ No □

SOCIO-ECONOMIC FACTORS

8. Number of Dependents…………………………

9. Monthly Income (UGX)…………………………
10. Employment status:
   - Formal [ ]
   - Informal/Casual [ ]
   - Self-employed [ ]
   - Unemployed (currently searching) [ ]
   - Unemployed (not searching) [ ]
   - Other [ ]

11. Member of any Savings and Credit Cooperative Organization (SACCO)?
   - Yes [ ]
   - No [ ]

12. If yes, which SACCO? ..........................................................

13. How long have you been a member (yrs./mth.)? .........................

14. What are your major benefits of being a member?
   - Saving culture [ ]
   - Cheap interest rates on loans [ ]
   - High return on investments [ ]
   - Better services to members [ ]
   - General financial independence [ ]
   - Other [ ]

15. If no in question 11, why?
   - Lack of secrecy [ ]
   - Disputes and differences [ ]
   - Lack of awareness [ ]
   - Lack of interest [ ]
   - Other [ ]

CLINICAL FACTORS

16. Time Since HIV Diagnosis (yrs.) .........................

17. Time Since start of Antiretroviral therapy (yrs.) .................

18. Baseline CD4 .........................

19. Baseline Viral Load .........................

20. Baseline WHO Clinical Stage .........................

21. Latest CD4 .........................

22. Latest Viral Load .........................

23. Latest WHO Clinical Stage .........................

24. History of any other Chronic illness
   - Yes [ ]
   - No [ ]

25. If Yes above, is it any of the following?
   - Hypertension [ ]
   - Diabetes [ ]
   - Mental illness [ ]
   - Other [ ]

RETENTION IN CARE

26. How often are your Clinic Visits scheduled?
   - Monthly [ ]
   - 2 monthly [ ]
   - 3 Monthly [ ]
   - Other [ ]
27. Distance from home to health facility (km) .....................

28. Have you missed any clinic appointment/schedule?
   Yes □        No □

29. If yes, how many? ........................................

30. What is your major reason for missing an appointment?
   Non-disclosure to partner/relative □ Fear of drug side effects □ Lack of transport to facility □
   Lack of food □ Lack of moral support □ Belief in God’s healing □
   Lack of general financial support □ Other ....................................................

31. Missing an appointment is risky, tick your most appropriate response
   Strongly agree □ Somewhat agree □ Neither agree/disagree □ Somewhat disagree □
   Strongly disagree □

32. Review Patients Clinic File/Record and state if they have adhered or not adhered to clinic appointments in the previous 12 months.
   Adhered □ Not Adhered □
APPENDIX II

OPERATIONAL DEFINITIONS

Comorbidity; the presence of one or more additional diseases or disorders co-occurring with a primary disease or disorder.

Adherence; The obedience of a patient to the medical advice provided by a clinician thus taking more than 95% of the prescribed antiretroviral medication in a given time period.

Adult: This refers to a mature fully grown person and in the case of our study shall be designated to be 18 years and above.

Highly active antiretroviral Therapy: A combination of antiretroviral agents aimed at maximal suppression of HIV RNA and proliferation of CD 4 lymphocyte cell count document as immunological recovery.

Incidence;

Retention in Care; A patient is considered retained in Care if they have been compliant to All scheduled Clinic Appointments in the past 12 months.