



**ORGANISATION FACTORS AND ADHERENCE TO ANTI-RETROVIRAL THERAPY
AMONG HIV/AIDS PATIENTS AT KISENYI HEALTH CENTRE, KAMPALA CAPITAL
CITY AUTHORITY**

BY

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF MANAGEMENT SCIENCE IN
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DECLARATION

I, Doreen Bakeiha, hereby declare that this dissertation entitled “Organisation Factors and Adherence to Anti-Retroviral Therapy among HIV/AIDS Patients in Kisenyi Health Centre (Kampala Capital City Authority)” was carried out by myself and that it is my original work that has never been presented to any other university or institution by anybody else for any academic award. Where other sources of individuals’ research work were used, acknowledgement has been duly given.

Signed.....

Date.....

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APPROVAL

This is to certify that this report entitled “Organisation Factors and Adherence to Anti-Retroviral Therapy among HIV/AIDS Patients at Kisenyi Health Centre (Kampala Capital City Authority)” was carried out by Doreen Bakeiha under our supervision and is submitted with our approval for examination.

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DEDICATION

This dissertation is dedicated to Mr and Mrs Bakeiha and my late mother, Ms. Alice Kyoheire for their support and guidance they have given me.

ACKNOWLEDGEMENT

Most of all, I thank the Almighty God for the wisdom and courage to complete this report. I extend my sincere thanks to my employers who allowed me to take time off to undertake my studies. I take the pleasure to extend my sincere gratitude to all those who contributed to my making this research a success and appreciate the individual respondents for the information provided that helped me gain insights during the great discussions and the stimulating dialogues.

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LIST OF ACRONYMS/ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ART	Anti Retro-viral Therapy
ARVS	Anti Retroviral Drugs
CVI	Content Validity Index
EMTCT	Elimination of Mother to Child Transmission
H/C	Healthy Centre
HAART	Highly Active Anti-Retroviral Therapy
HBM	Health Belief Model
HCT	HIV Counselling and Testing
HIV	Human Immune-Virus
IDI	Infectious Disease Institute
KCC	Kampala City Authority
KCCA	Kampala Capital City Authority
MOH	Ministry of Health
OIs	Opportunistic Infections
RNA	Ribo Nucleic Acid
SCT	Social Cognitive Theory
SEM	Social Ecological Model
SMC	Safe Male Circumcision
SPSS	Statistical Package for Social Sciences
SR	Sister In charge
TASO	The AIDS Support Organization
UMI	Uganda Management Institute
VL	Viral Load
WHO	World Health Organization

ABSTRACT

The study sought to investigate the contribution of organization factors towards adherence to Anti-Retroviral Therapy (ART) in HIV/AIDS patients at Kisenyi H/C IV. The objectives that guided the study included; examining the contribution of health care provider and adherence to ART, to investigate the contribution of health facility and adherence to ART and to establish the relationship between health care system and adherence to ART among HIV/AIDS patients at Kisenyi health centre IV. The study adopted a correlational case study design with a sample size of 97 respondents. The overall response rate of the respondents was 97.1%. Purposive and simple random sampling methods were used to select the respondents. Data was collected from both the staff and patients of Kisenyi Health Centre using self administered questionnaires and interview guide. The findings revealed that establishing good relationships with patients, good health workers' attitude towards HIV/AIDS patients and health workers reporting early at work improved adherence to ART among HIV/AIDS patients. Likewise, the findings showed that having the clinic in reach of all clients to medication, reducing waiting time, having convenient working hours, conducive environment and good infrastructure improved adherence to ART among HIV/AIDS patients. The findings established that health care system factors determined adherence to ART among HIV/AIDS patients which was implication that the existence of the required health care system factors, would enhance the adherence to ART among HIV/AIDS patients. The study recommends therefore, that management at Kisenyi Health Centre should offer specialized training to staff and patients in the area of organisational factors. To study the true nature and quality of organisational factors and adherence to ART, a longitudinal study is more appropriate. Since the model could only explain 32.6% in variance of the adherence to ART, the study recommends that another study be carried out comprising of other variables which were not part of the model.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

As Anti Retro-viral Therapy (ART) is scaled up, there is growing need for better coordination, improved infrastructure, adherence support, quality improvement and Anti Retro Viral (ARV) drug resistance monitoring as more individuals take ARV for prolonged periods (WHO 2010). This study examined the contribution of organizational factors towards adherence to Anti Retroviral Therapy (ART) among HIV/AIDS patients in Kisenyi Health Centre IV, Rubaga division, Kampala Capital City Authority (KCCA). Organizational factors were conceived as the independent variable and Adherence to ART as the dependent variable in this study. Organizational factors were measured in form of health care organization, health care provider, and health care system and adherence to ART as demonstrated in the conceptual framework. This chapter presents; Background of the study, Statement of the problem, Purpose of the study, Specific objectives, Research questions, Hypothesis, Conceptual framework, Significance of the study, Justification of the study, Scope of the study, and Definition of operational terms.

1.2. Background to the Study

1.2.1 Historical background

Antiretroviral therapy (ART) has demonstrated remarkable success in inhibiting HIV viral replication and reducing morbidity, mortality, and overall health care costs for HIV-positive persons. Optimal results of ART, however, are most common at high levels of adherence. As adherence decreases, HIV-1 RNA viral load (VL) and the risk of progression to AIDS generally increase, as does the likelihood of generating drug-resistant strains of HIV and of

infecting others. Despite these risks, non-adherence to ART is widespread in the United States and in Europe, with estimates of the percentage of prescribed doses taken ranging from 60% to 70%. (Jane, et. al. 2006). Current estimates of adherence indicate that despite earlier fears of poor medication adherence, patients in developing countries are able to achieve adherence levels similar to or higher than those of patients in developed countries (Friedland & Andrews, 2001, Harries. et.al 2001, and Orrell, et.al. 2003).

Studies by Steel (2001), Williams (2006) and Farley (2008) on people living with HIV- in the United States generally show similar, suboptimal rates of adherence of 96.7%, 84% and 84.7% respectively. Adherence measurements can be grouped into measures based on a patient's self-report of pill-taking behaviour and measures that are objective surrogates of pill-taking behaviour, such as pill count or microelectronic monitoring system (MEMS) caps. While it is difficult to compare studies using different measures of adherence, mean adherence was suboptimal in the following disparate groups of HIV-positive individuals: in a large multicenter clinical trial (85% adherence by self-report),(Mannheimer, 2002) among patients from a veterans and university hospital (75% by MEMS),(Paterson et. al., 2000) among the marginally housed (89% by self-report, 73% by pill count, 67% by MEMS),(Bangsberg et. al., 2000) among those with serious mental illness (66% by MEMS),(Wagner, 2003) among predominately minority women (64% by MEMS),(Howard et. at., 2002) and among 2 different groups of inner-city residents with a history of injection drug use (80% by pill count, 53.5% by MEMS in one group,(McNabb et. al., 2001) and 78% by self-report, 53% by MEMS in the other group (Arnsten,2001). Butler et. al. (2008) in rates and determinants of adherence to antiretroviral therapy (ART) in infants, children and adolescents: A systematic review, found pooled adherence rates as follows:

For high income countries, the pooled adherence was 61% with adherence rates for other countries as follows; Australia 66.7% (Goode, 2003); Belgium, 72.7% (Hammami, 2004);

Italy, 68.2%, 83.7%, 83.7% (Boni, 2000, Pontall, 2001, Albano, 2008 respectively); United Kingdom, 93.2% (LePrevost, 2006); European Countries had pooled adherence of 54.6% (Gibb 2003). Low and medium income countries had pooled adherence of 73% with adherence levels for countries as follows; Brazil 83.3%, (Costa, 2008), Romania 73.3%, (Cupsa, 2000), Jamaica 85.7% (White, 2008), Thailand 100%, (Safreed, 2007), Sub-Saharan Africa 67%, (Ellis, 2006), Ethiopia, Kenya, South Africa and Mali had 86.9%, 70.6%, 86.2% 79.7% respectively (Biadgillin, 2008, Vreeman, 2008, Davies, 2008, and Sylla 2008).

A review of Vreeman *et. al.*, (2009) findings indicated that the majority of the studies in developing countries report adherence levels of more than 75% (range 45–100%), while in developed countries the majority report less than 75% (range 20–100%). Another systematic review by Mills *et. al.* (2010) obtained a pooled estimate of adequate adherence by sub-Saharan Africa patients of 77% (95% confidence interval, 68–85%; based on a total of 12,116 patients), whereas the figure for North American patients was 55% (95% confidence interval 49–62%; based on a total of 17,573 patients). The same study concluded that adherence is a concern in North America (Ayalu & Biadgilign 2011). In a pooled analysis of 51 studies, involving over 20,000 women from the United States, Kenya, South Africa and Zambia, only 73.5% of pregnant women with HIV attained adequate adherence to ART during and after pregnancy (defined as equal to or greater than 80%), (Nachega *et. al.*, 2012)

According to National HIV Prevention Strategy for Uganda 2011-15, ARV adherence in Uganda is about 90% and adherence rates in Uganda have varied overtime since the introduction of ARVs in 1996 with pooled ART adherence rates standing at 89.4% (Nabukeera 2007). With such a background, it shows that perfect or near adherence to ART is critical for the success of ART providing programs throughout the world. In addition, high levels of adherence and positive outcomes of ART have been observed in some home based

ART care studies and in a multi-site studies including Botswana, Tanzania and Uganda (Mills et al 2006:685; Weidle et al 2006; WHO 2006a:79).

1.2.2 Theoretical Background

Adherence as a complex phenomenon in chronic treatment is predetermined by health behaviour and several theories have attempted to explain health behaviour but no single theory fully explains all the attributes. This study therefore to a great extent was guided by the Social Cognitive Theory (SCT) of Bandura (1986), and the Social Ecological Model (SEM) of McLeroy et al. (1988). SCT (Bandura, 1986, p.206) states that, "Of the many cues that influence behaviour, at any point in time, none is more common than the actions of others." It postulates that health behavioural change is the result of reciprocal relationships among the environment, personal factors, and attributes of the behaviour itself. Self-efficacy is one of the most important characteristics that determine behavioural change.

This theory thus provides basis to understand the influence of reciprocal determinism (interaction between personal factors, behaviour, and environment) that greatly determine adherence (Rowan, Mel & Enid Zuckerman, 2008). SEM of McLeroy et. al. (1988) asserts that effective interventions must influence multiple levels because health is shaped by many environmental subsystems, including family, community, workplace, beliefs and traditions, economics, and the physical and social environments. It therefore takes into considerations the multiple levels of influence namely intrapersonal, interpersonal, institutional, community, and public policy that interface to affect adherence.

This study integrated organization factors with constructs from social cognitive theory to explore the determinants of ART adherence. Social cognitive theory is a behavioural theory that integrates intrapersonal and interpersonal levels of the social ecological module and situates them together in a dynamic environment. The organizing concept of SCT is

reciprocal determinism, which asserts continual interaction between the behaviour, the person, and the physical and social environment (Baranowski *et al.*, 2002). Albert Bandura, who has been refining the SCT since the 1970s, has identified five core constructs of SCT (Bandura, 1977): Knowledge of health risks and benefits of behaviour, Self-efficacy to perform behaviour, Outcome expectations of behaviour, Goal setting and strategies to attain a goal of health behaviour, and Perceived facilitators and obstacles to performing a behaviour. This is a broad heuristic that asserts that adherence to ART is influenced by factors at multiple levels of the social-ecological framework.

1.2.3 Conceptual Background

A growing body of literature mainly from western countries has underscored the importance of adherence for the successful administration of ART. Already the WHO (2003) has identified adherence to ART as the most important issue. Organization factors in the context of this study comprise; health care provider factors (attitudes/ relationship, health education/counselling, staff shortage), health facility factors (accessibility, waiting hours/ working times, environment, infrastructure), health system factors (drug availability, incentives, patient follow up, availability of guidelines).

A health care provider (also known as a health worker) is an individual or an institution that provides preventive, curative, promotional or rehabilitative health care services in a systematic way to individuals, families or communities. Health care providers may be health care professional within medicine, nursing, or allied health professions or may also be public/community health professionals (WHO, 2003). Health facility: A centre that may carry out a promotive, protective, preventive, diagnostic, curative and rehabilitative health care activities for ambulant people (WHO, 2003).

Health system, also sometimes referred to as health care system is the organization of people, institutions, and resources to deliver health care services to meet the health needs of target populations. Health system comprises the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities, the primary intent of which is to improve health. Generally, the factors that influence adherence to antiretroviral therapy (ART) fall into three categories namely, patient-related (psychosocial and educational) factors, provider factors (interaction with physicians and other health workers and access to medications) and clinical factors (pill burden, dosing frequency and adverse effects of medications).

Adherence is defined as the extent to which a person's behaviour in terms of taking medications, following a diet, and executing lifestyle changes follows agreed recommendations from a health care provider (WHO, 2003). In the case of ART this implies taking the drugs in the right quantities, at the right time, and following dietary and other lifestyle changes for a lifetime. To obtain a successful treatment outcome the current treatment for HIV/AIDS requires adherence levels of greater than 95% (Garcia et. al., 2003; Nilsson, et. al., 2006; Paterson, et. al., 2000; Sarna, 2005).

1.2.4 Contextual Background

Kisenyi H/C IV is situated on Mwanga II road, Musajjambwa, Mengo Parish, Central division, KCCA. It started as a prison for Buganda Kingdom until 1966 during the Buganda crisis when kingdoms were over thrown and the Obote I soldiers took it over until 1971 by the Whites and Indians and in the same year the then Kampala City Council (KCC) now KCCA took it over and upgraded it to up to the current status of Health Centre IV. It is estimated to be serving the catchment population of 563,067 clients to date. It also serves the three zones of Kisenyi (I, II, III), Mengo, Lubiri and surrounding places (Kisenyi H/C IV

Annual Report 2010-2012). The health centre has a total number of 106 staff of which 96 are Doctors, Clinical officers, Nurses and 10 support staff and offers the following services: HIV/AIDS care and management, Treatment OIs, EMTCT, Family Planning, HIV Counselling Testing (HCT) and provide ART, Safe Male Circumcision (SMC), and Adolescent Care and Support.

Kisenyi H/C IV is one of the KCCA health facilities accredited by Ministry of Health (MoH) to offer HIV/AIDS testing, care and management with provision of ART services. HIV/AIDS annual reports on patient adherence to ART for the periods 2010 to 2012 indicated average adherences of 90% good, 6.2% fair, and 3.8% poor (Kisenyi H/C IV Annual reports 2010-2012). This is therefore associated with treatment failure requiring changing patients from 1st line to 2nd line ARVs, increased expenditure on health care, increased hospitalizations due emergence or recurrence of OIs, and increased mortality and morbidity.

1.3 Statement of the Problem

For most ART programs in Sub-Saharan Africa including Uganda, the emphasis has been on initiating people on ART than ensuring effective use of medicines. This is because their performance is measured in terms of access rather than the adherence which is necessary for sustained health benefits and to safeguard public health against the risk of drug resistance caused by non-adherence to the antiretroviral drugs (WHO, 2006a:17, 25-27). The following has been done to improve HIV/AIDS care and treatment. The healthy facility has recruited and trained more health workers, mentored existing staff in HIV/AIDS care and adherence in partnership with other organizations though satisfactory results are yet to be achieved (Annual report, 2010-2012). The adherence of patients on ART at Kisenyi H/C IV (90%) falls below the national target of (95%) and the factors that have led to this in such an urban setting have not been fully explained as existing research for instance, Weidle, et. al., (2006) and Sasaki (2012) have targeted rural settings and most research has dueled on patient factors

such as use of drugs and alcohol, age, sex, cultural beliefs or ethnicity; medication regimen such as dosing complexity, side effects, number of pills or food requirements leaving organization factors unexplained. It is thus against the above background that the proposed study sought to investigate the contribution of organization factors to adherence such as health care factors, health facility factors and health system factors which have then compelled the researcher to do this study. (Annual Report, 2010-2012)

1.4 Purpose of the Study

The purpose of the study was to investigate the contribution of organization factors towards adherence to ART in HIV/AIDS patients at Kisenyi H/C IV.

1.5 Research Objectives

- i) To examine the contribution of health care provider factors towards adherence to ART among HIV/AIDS patients at Kisenyi health centre IV
- ii) To investigate the contribution of health facility factors and adherence to ART among HIV/AIDS patients at Kisenyi health centre IV.
- iii) To establish the relationship between health care system factors and adherence to ART among HIV/AIDS patients at Kisenyi health centre IV.

1.6 Research Questions

- i) What is the contribution of health care provider factors towards adherence to ART among HIV/AIDS patients at Kisenyi health centre IV?
- ii) What is the contribution of health facility factors towards adherence to ART among HIV/AIDS patients at Kisenyi health centre IV?
- iii) What is the contribution of health care systems factors towards adherence to ART among HIV/AIDS patients at Kisenyi health centre IV?

1.7 Hypotheses of the Study

- i) Health care provider factors have a positive effect on adherence to ART among HIV/AIDS patients.
- ii) Health facility factors enhance adherence to ART among HIV/AIDS patients.
- iii) Health care systems factor greatly contribute to adherence to ART among HIV/AIDS patients.

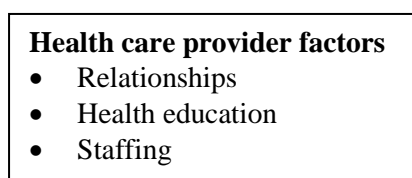
1.8 Conceptual Framework

This study sought to establish whether there is a relationship between organizational factors and adherence to ART among HIV/AIDS patients at Kisenyi Health centre IV. The study's conceptual framework is based on the model shown in figure 1. The conceptual framework shows the relationship between organizational factors and adherence to ART among HIV/AIDS patients. The study is conceptualized to consist of independent variables as organizational factors {Health care provider, Health facility and Health system} and adherence to ART among HIV/AIDS patients at Kisenyi Health Centre IV with dimensions of right doze, right time and frequency as the dependent variable and the approach used was many to one as per objectives.

Figure 1: Conceptual framework showing the relationship between Organizational factors and Adherence to ART among HIV/AIDS patients

Organizational Factors (IV)

Adherence to ART (DV)



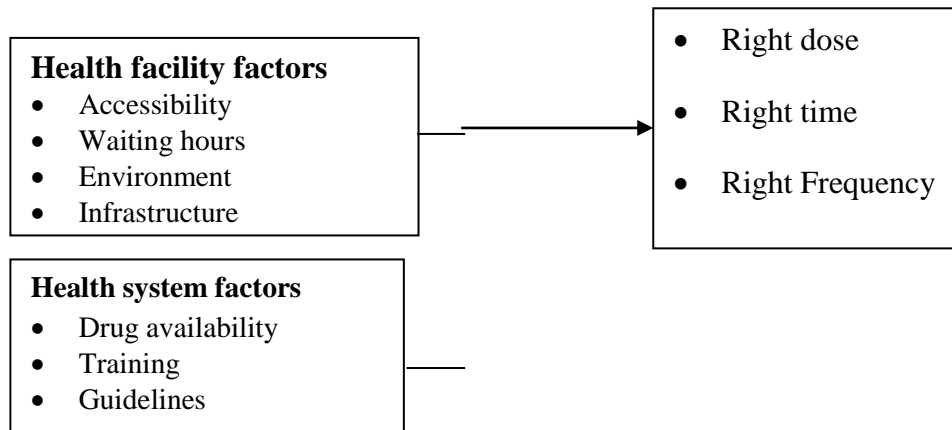


Fig 1: Conceptual Framework

Source: World Health Organization (2005)

The conceptual framework is underpinned by organizational factors which were measured by healthy care provider factors, healthy facility factors and healthy system factors. Healthy care provider comprised relationships, health education and staffing. Healthy facility was one of the key organisational factors that focus accessibility, waiting hours, environment and infrastructure. On healthy system as a dimension of organisational factors, emphasis was on drug availability, training and guidelines. Adherence to ART was measured according to right dose, right time and right frequency. Organisational factors contribute a crucial role in the enhancement of adherence to ART. Therefore, the study attempted to establish the effect of organisational factors on adherence to ART. The dependent variable was adherence to ART whereas, the independent variable comprised of organisational factors.

1.9 Significance of Study

The current public health arena is grappling with issues of treatment adherence for chronic diseases. Knowledge gained from this study about factors in the population associated with adherence or non-adherence to antiretroviral therapy by HIV positive patients may help in making recommendations regarding the development of appropriate health education strategies to empower patients about the importance of adherence to ART.

The information may be used to develop guidelines and education materials that can be used in adherence counselling before patients are started on ART and during the follow-up period after starting.

The findings may contribute to the review of the HIV/AIDS treatment protocols and policies, related in-service education for medical personnel and review of health education programs for HIV positive patients so as to improve the clinical management of HIV/AIDS.

The study findings may increase the body of knowledge on the contribution of organization factors towards adherence to ART among HIV/AIDS patients at Kisenyi health centre IV Rubaga Division.

1.10 Justification of the Study

In Uganda the delivery of ART services has largely been in the hands of non-governmental organizations. These organizations have signed memorandum of understanding with the Ministry of Health and are contracted for specific periods to provide care and treatment to pre-ART and ART patients. Therefore their policies of operation are not much controlled by the government casting concerns on sustainability and continuity after expiry of their contracted period (Cochrane Database syst Rev 2008). Further, factors related to health care provider, health care organization and the health care system as a whole have received far less attention and therefore the researcher was compelled to investigate these organization factors that can affect adherence to ART among patients.

1.11 Scope of the Study

1.11.1 Geographical scope

The study was carried out at Kisenyi Health Centre IV that is operated by KCCA in Rubaga division Kampala (Uganda) reason being that this Health centre is surrounded by the most

heavily populated area /slum with the highest number of patients receiving care and treatment at the health centre.

1.11.2 Content scope

The study focused on the contribution of organizational factors towards adherence to ART among HIV/AIDS patients at Kisenyi H/C IV. The independent variable in the study was organization factors which was limited to health care provider (Relationships, Health education/Counseling, Staff shortage), health facility (Accessibility, Waiting hours/ working times, Environment Infrastructure) and health system (Drug availability, Incentives, Patient follow up, Availability of guidelines) and the dependent variable was Adherence to ART which included right dose, right time and frequency.

1.11.3 Time scope

The study covered a period of 4 years from 2009 to 2012 because in this period the estimate of the number of HIV/AIDS patients on ARVs was between 1900 to 3600 (Kisenyi Health Centre Annual Report 2012).

1.12 Operational Definitions

Adherence refers to patient behaviour of taking the right doses at the right time and frequency

ART adherence refers to the ability to comply with ART medication prescribed and dispensed in the clinic for 95% of the time or more.

Health care providers refer to people who offer services to sick people in a health facility,

Prophylaxis refers to the treatment which is given to patients in order to prevent diseases from occurrence or re-occurrence

Healthy facility refers to Kisenyi health centre that is accredited by MoH to offer ART

Healthy system refers to the organizational measures put up to deliver ART services

Organisation refers to Kisenyi H/C IV which is mandated to offer ART services.

Right dose refers to taking the right number of tablets.

Right time/frequency: Taking tablets at the right intervals agreed up on with your clinician

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter deals with the review of literature from other authors relevant to this study in regard to the contribution of organizational factors towards adherence to ART. The literature was sub divided into theoretical, conceptual and actual review of literature which was done objective by objective.

2.2 Theoretical Review

The use of theory in this field of research is still in its infancy stage and disjointed. Amico. *et al.* (2005) succinctly assesses the limited use of theory in ART adherence research, and the importance of developing multivariate, theory-based models: “Thus far, exploration of the determinants of ART adherence has been dominated by the ‘single-variable,’ predictive approach. While this work has provided valuable information regarding the associations between individual variables and adherence, it does not present a sufficiently complex view of the factors associated with ART adherence. Multivariate, theory-based models are only now emerging, and the evaluation of such models is critical in the development of effective interventions (Harman *et al.*, 2005)”.

One of the problems with how theory has been applied in the field of ART adherence is that it has limited its lens to the individual level, failing to consider how the organizational context and interpersonal relationships influence patients’ adherence. Studies of the correlates of adherence to ART have consistently found that adherence is influenced by variables at multiple levels of the social-ecological framework, including factors inherent to the individual, the individual’s relationships, and characteristics of the physical and social

environment (Ammassari, Antinori et al., 2012; Chesney, 2003; Fogarty et al., 2012; Ickovics et al., 2012b; Mills, Nachega, Bangsberg et al., 2006; Sankar et al., 2006; Vervoort et al., 2007).

Various theories have been used to explain variations in ART adherence and to inform adherence interventions though no single theory has fully and satisfactorily explained adherence. Some of these include:

The Health Belief Model (HBM; Becker 1974) was developed in the 1950s by a group of social psychologists working in the field of public health who were seeking to explain why some people do not use health services such as immunization and screening. It states that; For people to adopt recommended physical activity behaviors, their perceived threat of disease (and its severity) and benefits of action must outweigh their perceived barriers to action. Its core constructs include; Perceived susceptibility, Perceived severity, Perceived benefits of action, Perceived barriers to action, Cues to action, and Self-efficacy.

Protection Motivation Theory of Rogers (1983) originally developed to explain how people respond to fear-arousing health threat communications or 'fear appeals.' It can be regarded as an adaptation of the HBM. Protection motivation refers to the motivation to protect oneself against a health threat; it is usually defined operationally as the intention to adopt the recommended action.

The theory of Reasoned Action by Ajzen & Fishbein (1980) was developed out of social-psychological research on attitudes and the attitude behavior relationship. The model assumes that most behaviors of social relevance (including health behaviors) are under volitional control, and that a person's intention to perform behaviour is both the immediate determinant and the single best predictor of that behaviour. Intention in turn is held to be a function of two

basic determinants: attitude towards the behaviour (the person's overall evaluation of performing the behaviour) and subjective norm (the perceived expectations of important others with regard to the individual performing the behaviour in question).

2.3 Organization Factors Contributing towards Adherence

2.3.1 Health Provider and Adherence to ART

2.3.1.1 Relationships between health provider factors and Adherence to ART

A meaningful and supportive relationship between the patient and health care provider can help to overcome significant barriers to adherence. Factors that have been identified as strengthening the patient-health care provider relationship include perception of provider competence, quality and clarity of communication, compassion shown by the provider, involving the patient as an active participant in treatment decisions and convenience of the regimen. Patients become frustrated with health care providers when misunderstandings occur, treatment becomes complex, side-effects go unmanaged and the patient is blamed for being a “bad patient” (Sabate, 2009).

Given the psychological effect that HIV imposes on those who are infected, there is need to promote relationship building through which trust is attained and then the patients disclose their HIV status to those who offer ART services. This has been one of the goals that Kisenyi health centre has been promoting as away of enhancing adherence to ART by the locals. Although more still needs to be done, the centre has been progressing in establish patient relationships which in turn have resulted into adherence to ART.

2.3.1.2 Health Education and Adherence to ART

Although health care professionals have a significant role in promoting patient adherence, only few studies on this topic have been reported in the literature. Training health care

professionals in the use of patient-centered methods has been shown to improve patient satisfaction with treatment and may also improve patients' medication adherence. Health care professionals trained to use goal-setting, feedback and ongoing education had better patient outcomes (Sabaté, 2009). A recent meta-analysis focusing on physician communication and patient adherence to treatment showed that patients whose physician communicates poorly have a 19% higher risk for non-adherence compared to patients whose physician communicates well. The authors' emphasize that interventions focusing on communication training for physicians is essential and effective (Di-Matteo, Giordani, Lepper & Croghan, 2002).

As away of sensitising both staff and the locals, Kisenyi health centre has all along ensured that the different stakeholders receive the required information on the relevance of adherence to ART through different communication channels. These health care provider services have in turn supported the success of ART programme in the area.

2.3.1. Staffing and Adherence to ART

Staff shortages could harm the provision and quality of health care in Uganda, so staff retention and motivation are crucial. Understanding the impact of HIV/AIDS on staff contributes to designing appropriate retention and motivation strategies. This research aimed 'to identify the influence of HIV/AIDS on staff working in general hospitals at district level in rural areas and to explore support required and offered to deal with HIV/AIDS in the workplace'. Its results were to inform strategies to mitigate the impact of HIV/AIDS on hospital staff (Marjolen, 2007).

Given to the nature of the services offered at Kisenyi health centre, the need for staffing was paramount so as to deliver the required services efficiently by qualified staff. For this reason

the centre ensures that the required staff force is available to deliver the required services to patients and by so doing this has encouraged adherence to ART in the area.

2.3.2. Health Facility and Adherence to ART

2.3.2.1 Accessibility and Adherence to ART

Access to reliable primary health care is related to increased adherence to ART, whereas missed clinic appointments are associated with virological failure. There are a number of aspects of a clinical setting that may be associated with adherence including transportation, waiting time, convenience of scheduling appointments, integrated services and confidentiality (WHO, 2012). In a study on Adherence to antiretroviral therapy (ART) during the early months of treatment in rural Zambia: Influence of demographic characteristics and social surroundings of patients, it was found that although time required for transportation to the health facilities and transportation fees were not significantly associated with treatment adherence, accessing to treatment facilities can be a problem for many patients living in Mumbwa.

This is supported by the result that it took over one hour to reach health facilities in half of patients on ART in this study. Because of this long distance to access to health facilities in Mumbwa, patients who missed doses might report that the distance from home to the district hospital or rural health centers caused the disruption in ART adherence (Sasaki *et al.*, 2012). Regarding Kisenyi health centre, the location of the facility among communities that best need the health services this promotes accessibility to the services by the locals and in turn promotes adherence to ART in the area.

2.3.2.2 Waiting hours/Working times and Adherence to ART

Sendaga (2010) asserts in Factors affecting the Adherence to Antiretroviral Therapy by HIV positive patients treated in a community based HIV/AIDS care programme in rural Uganda: A case of Tororo district with regard to the perceptions on aspects of care related to the clinics, that described frequency distributions indicated general agreement on most of the aspects by the respondents that: the ART clinic was easily accessible (91.44%), transport costs to the ART clinic are affordable (76.26%), the waiting time is short (53.70%), the appointment dates for drug refills are convenient (89.11%), the physical environment of the clinic appears neat and welcoming (75.10%), the clinic is adequately staffed (64.20%), The drugs are always available at the ART clinic (98.44%). In the case of Kisenyi health centre, there cases of patients having to wait for long hours, although this trend has recoded a downward trend given the rise in staffing at the centre. The timely health services being offered at the centre have in turn promoted adherence to ART in the area.

2.3.2.3 Environment and Adherence to ART

Sanjobo (2011) in a study on Adherence to antiretroviral treatment in Zambia: a qualitative study of patients and health professionals' views found that many patients reported missing clinic appointments and would not come for refill because the environment at the clinic was unfriendly. They particularly pointed that whenever it was raining they had nowhere to sit in the clinic and thus would prefer not to come on such days. The environment in which the Kisenyi health centre is located supports delivery of ART services due to the fact that it is composed of people that can not finance these services when accessing them on private basis. Therefore, the location of the centre makes it reach out to the locals that need the services and in that way promotes adherence to ART.

2.3.2.4 Infrastructure and Adherence to ART

Obua *et. al.*, (2011) in Multiple ART Programs Create a Dilemma for Providers to Monitor ARV Adherence in Uganda concluded that where there was duality of programs at a facility, it was found that the capacity of health providers to perform optimally was adversely affected. This was associated with poor rankings of such facilities. The multiplicity of requirements in the dual programs challenges the providers with the dilemma of fulfilling the competing demands coupled with inadequate infrastructure. Regarding infrastructural development at Kisenyi health centre, more needs to be done so as to attend to more patients, although with the current facilities the centre has been able to deliver health services to the public which in turn has encouraged wide adherence to ART in the area and beyond.

2.3.3. Health Care System and Adherence to ART

2.3.3.1 Drug Availability and Adherence to ART

Health outcomes cannot be accurately assessed if they are measured predominantly by resource utilization indicators and efficacy of interventions. The economic evaluation of non-adherence requires the identification of the associated costs and outcomes. It is logical that non-adherence entails a cost due to the occurrence of the undesired effects that the recommended regimen tries to minimize. In terms of outcomes, non-adherence results in increased clinical risk and therefore in increased morbidity and mortality.

For health professionals, policy-makers and donors, measuring the performance of their health programmes and systems using resource utilization end-points and the efficacy of interventions is easier than measuring the desired health out-comes. While such indicators are important, over-reliance on them can bias evaluation towards the process of health care provision, missing indicators of health care uptake which would make accurate estimates of health outcomes possible (WHO, 2009). Based on the review by Osterberg (Osterberg &

Blaschke 2005), the methods to improve adherence can be grouped into four broad categories, namely, (i) patient education, (ii) improved dosing schedule, (iii) increased opening hours of the clinic and shorter waiting time, and (iv) improved communication between physicians and patients. Patients who often miss appointments could benefit from assisted clinic schedule. The involvement of other healthcare workers such as pharmacists, nurses and behavioural specialists improve adherence (Simoni *et al.*, 2010).

Although there was drug unavailability at Kisenyi Health Centre during the inauguration of the centre, the situation has since changed to where there is drug availability and as a result of that, this has encouraged adherence to ART given that the patients at receive the required drugs in the right doses, at the right time and in regular time frames.

2.3.3.2 Employee Training and Adherence to ART

The efficiency of any organization depends directly on how well its members are trained; adequate training improves job performance skills among employees (Straus & Sayles, 1972). Training can yield results when conducted continuously as organizational changes arise but should also be based on although research of training needs at all levels of organization. Ferral (2001) asserts that health professionals work towards the discovery of good treatment for the HIV/AIDS training becomes crucial both to care providers and organization as it expands their knowledge base, exposes them to recent and relevant ways of combating the epidemic.

Similarly in the 2008-12 strategic plan the organization pledges to continue contributing to human resource requirements of the National HIV response through capacity building of individuals, Institutions and communities.(TASO Annual Report, 2008). The purpose of training should be to improve organization as well as program performance .it should not be something aimed at making ones career better but to as well change behaviours of employees

to suit the expectations of clients during service delivery according to Ferral (2001). There is no greater organization assert than that of a trained personnel and that precisely explains why employees who understand their jobs are likely to have a higher morale to work hard thus improving on service delivery.

Nakawunde (2009) asserts that the impact of training on individual staff skills and performance can be demonstrated using a training impact evaluation tool which helps managers to identify strengthen links between training and performance of staff. This can eventually help managers to make recommendations to decision makers and find solutions to performance problems. Good individual performance will result into better client service and make a significant realization of organizational goals. In regard to Kisenyi Health Centre, when the staff supporting the health systems at the centre are equipped with the required knowledge and skills on health issues, this will promote adherence to ART by the locals.

2.3.3.3 Availability of Guidelines and Adherence to ART

These publications are guidelines to clinical practice, based on the best available evidence at the time of development. Adherence to these guidelines may not ensure a successful outcome in every case. These guidelines should neither be construed as including all proper methods of care, nor exclude other acceptable methods of care. In addition, evidence-based clinical practice guidelines are only as current as the evidence that supports them. Users must keep in mind that new evidence may supersede recommendations in these guidelines according to MOH Singapore (2013). Likewise, in the case of Kisenyi Health Centre, having in place the required guidelines on the available systems that are supposed to be followed by staff and patients will promote adherence to ART because the systems will foster timely administration of the required dosage to patients.

2.4 Summary of Literature Review and Gaps Identified

Under literature review, a review of literature was carried out in relation to the study objectives. Literature on the contribution of health care provider towards adherence to ART among HIV/AIDS was reviewed and established that health care provider were paramount in determining adherence to ART among HIV/AIDS in developing countries where the epidemic was most prevalent compared to developed countries. In regard to the contribution of health facility on adherence to ART among HIV/AIDS patients, the literature revealed that there were several health facility factors that determined adherence to ART among HIV/AIDS patients. Among these included accessibility, waiting hours, environment and infrastructure. The literature also revealed that there was a significant relationship between health care system and adherence to ART among HIV/AIDS patients. However, much of the research has been concentrated on the western countries and Asia and little has been researched on developing countries such as Uganda where the epidemic is most prevalent. Therefore this study sought to investigate the contribution of organization factors and adherence to ART among HIV/AIDS patients in Kisenyi Health Center IV.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes how the study was conducted. It focuses on the research design and approaches that were adopted, the study area, target population, sampled population, sample size and selection. The chapter examines data collection instruments, sampling techniques and procedures, pre-testing of instruments, methods and procedures for data collection and analysis.

3.2 Research Design

The study was cross-sectional employing a case study design and both qualitative and quantitative approaches were employed. A case study design was used because it gave an in-depth investigation of institution, group, individual or phenomenon. Amin (2005) asserts that a case study design provides an in-depth study of the problem with limited time scale perceived as the most holistic way of obtaining insights, while correlation design was used to establish the magnitude of the relationship between the variables and regression to find out the extent to which independent variable (Mugenda & Mugenda, 1999; Descombe, 1988) predicted the dependent variable. The researcher triangulated quantitative and qualitative data that was descriptive and gave detailed information which was used to strengthen quantitative data which was numeric in nature while qualitative was good in getting facts in numbers that were easy to present and analyze using figures, charts, frequencies and tables.

3.3 Study Population

This study was conducted in Kampala district and it was strategically targeting a population of 145 respondents consisting 140 patients who visited the health centre per day out of the 600 patients who received ART according to the patient appointment register, and five other respondents in following categories; one sister in-charge and four clinicians,

3.4 Sample Size and Selection

A sample is a proportion of the population whose results can be generalized to the entire population (Amin, 2005). The sample size was derived using the Krejcie & Morgan,(1970) statistical table adopted from (Amin, 2005).The category of respondents who were interviewed were stratified in order to purposively target health workers and simple random sampling was used for adult patients accessing ART in Kisenyi H/C IV.

Table 3.1: Sample Size

No	Category	Population	Sample	Sampling Technique
1	Sr. In-charge	1	1	Purposive
2	Clinicians	4	4	Purposive
4	Patients	140	103	Simple Random
	Total	145	108	

Source: Kisenyi H/C IV Annual Report.2013

From the table 3.1 above, there was one sister in-charge and comprised the sample size. The number of clinicians was 4 and the sample selected was 4, the number of patients was 140 and the sample size was 103 giving a sample size of 108. Purposive sampling was used to select health workers while simple random sampling was used to select patients.

3.5 Sampling Technique and procedure

3. 5.1 Probability sampling

The study used both probability and non-probability sampling techniques. Probability sampling technique was carried out through simple random sampling to identify the patients/clinic to be interviewed because it was simple technique to use in a big population (Barifaijo,et al,2010). Probability sampling is a process of selecting a sample in such a way that all elements in the population have equal chance of being selected. Probability sampling procedures offer a viable and sometimes more efficient alternative to unrestricted design (Sekaran 2003).

According to Mugenda & Mugenda (1999), simple random sampling is used in a situation when each respondent has an equal chance of being selected to participate in the study. Simple random sampling was used in the selection of respondents because it was not possible to reach out to all clients and each respondent has a chance of being chosen. Simple random sampling was used to select patients.

3.5.2 Non-Probability Sampling

Purposive sampling as a non-probability sampling technique was used to select the health workers. Non-probability sampling is where elements in the population do not have a known probability of being selected. Purposive sampling was used to select key informant's interviews because of their expertise and influence in the area of study. Purposive Sampling was used because it aimed at selecting units from the population of interest in order to fairly generalize the results back to the population from which they were chosen According to Chakraborty, (2009) the study adopted a purposive technique because staffs were few and known homogeneous in category namely key informants (Sr. In-charge and clinical officers). While using purposive sampling techniques the researcher used her own judgment and common sense regarding the participants from whom information was collected. According to Amin (2005) such participants included the mentioned staffs by virtue of their expertise in offering HIV/AIDS care and treatment at Kisenyi H/C IV.

3.6 Data collection methods

This study involved primary data which was collected through questionnaire survey, interview survey and document review methods. This enabled the researcher to get accurate results for the study as the strengths of one method complimented the other as recommended by Amin (2005).

3.6.1 Questionnaire Survey

The researcher used questionnaires to collect self reported data from the staffs and patients at the ART clinic in order to establish how organizational factors affect adherence. ART among HIV/AIDS patients at Kisenyi H/C IV self administered questionnaires allowed a large sample size to be used which made the results more dependable and reliable Amin, (2005) the questionnaire was developed using a five Likert scale ranging from strongly agree, Agree, undecided, disagree and strongly disagree, to help researcher analyze qualitative data quantitatively (Mugenda & Mugenda 1999).

3.6.2 Interviews

Semi-structured interviews were used so as to collect data from Sr. in-charge and clinicians. To obtain accurate information through interviews the researcher needed to obtain maximum co-operation from respondents. Interviews were advantageous in that they provided in depth information during data collection. It made it possible to obtain data required to meet specific objectives of the study as recommended by Mugenda & Mugenda (1999).

3.6.3 Document review

Document review was the main source of secondary data from text books, internet, media, journals, reports, other researches and magazines. The researcher generated a list of documents that contained the required information for the study and accessed them from the relevant libraries after seeking permission from the owners.

3.7 Data Collection Instruments

3.7.1 Questionnaire

Self administered questionnaires were used on patients. Structured questions arranged per objective were used for employees because this is the most appropriate instrument for a big sample. The questionnaire will use a 5- point Likert scale ranging from 5 {strongly agree} to

1 {strongly disagree}, in order to provide consistent responses. The questionnaire was systematically organized to include demographic characteristics of the respondents, organization factors limited to Health care provider factors (Attitudes/Relationships, Health education/Counseling, Staff shortage), Health facility factors (Accessibility, Waiting hours/working times, Environment Infrastructure) and Health system factors (Drug availability, Incentives, Employee Trainings, Availability of guidelines) and adherence to ART with the dimensions of right doses, right time and right frequency.

3.7.2 Interview guide

Interview guide was used for the two participants at the managerial level in order to obtain in-depth information. Interviews were opted for because of the seniority of the top management participation. An interview guide was used to supplement the questionnaire and get first hand narrative Vital while meeting sister- in-charge, doctors and nurses.

3.7.3 Document review checklist

Document analysis involved reviewing existing publications and literature related to the study problem and cross reference with what the study discovered Sarantakos (2005) asserts that reviewing documents gives an in depth study of the organizational factors towards adherence to ART among HIV/AIDS patient at Kisenyi H/C IV.

3.8. Data Quality Control (Validity and Reliability)

3.8.1 Validity

To ensure validity, the researcher consulted supervisors at UMI who moderated the contents of the research tools and made sure that each item had a link to the objectives of the study and ensure all items cover full range of issues being measured. Face validity was established where tools and questions were chosen rationally , an appropriate way to find out what was being measured, content validity focused on the extent to which the contents of instruments

corresponded to contents of the theoretical concept designed to measure according to Amin, (2005).

The instruments were discussed with the supervisors and later pre-tested using a sample of 12 respondents within the study population but outside the sample which was asked to fill them and later gave comments on their accuracy and clarity, and after pre-testing ambiguous questions were polished. To measure validity of variables and measures of dimensions of factors affecting adherence to ART among HIV/AIDS patients at Kisenyi Health Center IV, a validity test was carried out using content validity index (CVI) formula prior to the administration of the research instruments. This is intended to find out whether the questions are capable of capturing the intended data that is stated in research objectives and questions.

$$CVI = \frac{13}{14} \times 100 = 93\%$$

The computed CVI of the instrument was 0.93. This was considered valid because the minimum CVI recommended in the survey studies is 0.7 as recommended by Amin, (2005).

3.8.2 Reliability

To test reliability of instruments, the researcher administered the research tools so as to pre-test for consistency and logic flow of questionnaires prior to actual data collection all data collection tools and items were subjected to pre -test or pilot study at Kisenyi H/C on a small sample of 12 staff to check for the clarity of the questions asked and the time required for data collection the researcher construct research instruments and analyzed the pre-test results using computer program SPSS and Cronbachs Alpha split the questions on the instrument in a possible way and computed correlation values for them all. The computer program was used to generate Cronbachs Alpha Coefficients and just like correlation co-efficient the closer it is to one the higher the reliability estimate of the instrument. The method enabled the

researcher to test her study and research instruments for reliability more times and resource convenient way.

$$\alpha = \frac{1 + (N-1)r}{N}$$

n - Is equal to the number of items

r – Bar is the average inter-item correlation among the items from this formula that if you increase the number of items you increase Cronbachs Alpha. Additionally, the average inter-item correlation is low Alpha will be low. As the average inter-item correlation increases, Cronbachs Alpha increases as well.

Table 2: Reliability Statistics Results

	Cronbach’s Alpha	Number of Items
Adherence to HAART	.822	3
Health care provider factors	.846	4
Health facility factors	.761	5
Health system factors	.832	2
Average	.815	

The reliability statistics shown in table 2 reflect high reliability coefficients which indicated that all sub areas had been included in their correct proportions. According to Cronbach (1950), coefficient alpha of 0.6 and above is considered adequate. From the results all the Cronbach alpha coefficients ranged from .761 to .846, therefore meeting the acceptable standards.

3.9 Data collection Procedure

The researcher submitted her proposal to the School of Management Science for approval. Upon successful defence of the proposal, the researcher obtained a letter from Uganda Management Institute seeking to be authored to conduct the research. Questionnaires were hand delivered to the respondents assuring them of voluntary, confidentiality and anonymity,

completed questionnaires were collected after five days. The researcher contacted key informants and provided them with the necessary details of the study seeking their consent to participate in the study and requesting for a date on which the interview can be conducted.

3.10 Data Analysis

After participants responding to the questionnaires and interviews, raw data was cleaned, sorted and entered into the statistical package for social sciences (SPSS) for analysis.

3.10.1 Quantitative data analysis

According to Mbaaga, (2000) it states that quantitative data is a process that is analyzed by editing, coding and tabulating it. Questionnaire data was obtained from questionnaires each questionnaire was given a unique serial number extracting of inertial summaries by data reduction using soft numbers coding by categorizing data, sorting and filling was carried out. Statistical package for the social sciences (SPSS) student version of 18.0 was used to aid the processing and summarizing of information got from the questionnaires. This tool was user friendly which helped the researchers to generate frequencies, Pearson's correlation coefficient and helped in interpretation of data.

3.10.2 Qualitative data analysis

Quantitative data was collected, sorted out and interpreted manually from the respondents. Each interview was analyzed and interpreted using content analysis to appropriate the nature of the collected data before emerging themes are identified using "Template analysis" approach analysis of qualitative data was done to identify similarities across several accounts as well as direction. Data was categorized into recurrent themes that seemed relevant to answer the research question, descriptive analysis was made from information obtained from the questionnaires and interviews key categorical variables such as gender, education of respondents was presented in a table form. For non-categorical data such as organizational factors(health care providers, facility factors and health systems and adherence to ART were

presented and well laid out in narrative explanations to explain the descriptive content in the variables and data presented in qualitative way.

3.11 Measurement of variables

The variables of the study were measured in relation to indicators. Identify using a Likert scale approach the measurement of variables was based on the indicators of independent variables (IV) and dependent variables (DV) as illustrated in the conceptual frame work of the study. The categories were be ranked the 5 Likert scale having the options, strongly agree, agree, neutral, disagree and strongly disagree. By analyzing statistics such as correlation the study was intended to assess the relationship between independent variables and dependent variables.

3.12 Ethical considerations

The study was approved by the School of Management Science at UMI, KCCA and Infectious Diseases Institute. Confidentiality was ensured as no identified details were written on the questionnaires to link anyone to the data obtained. The interviews were conducted in private and participants remained anonymous and the completed questionnaires were not given any names. The study was seeking to avoid harm to participants like; emotional, physical, social and financial harm. To an extent, participation in the study would not disrupt normal activities for the respondents.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter comprise of the presentation of the results, analysis of the results and interpretation of results. The chapter comprises three sections. Section one presents the demographic characteristics which include gender, marital status, age, religion and level of education. Section two deals with the presentation of the results on the study objectives using item mean results and correlation results. Section three studies the combined effect of the independent variables on the dependent variable using regression analysis. The presentation of results begins with a description of the demographic characteristics using frequency tabulation and figures. Item means and correlations are used to present the results of the study objectives.

4.2 Response Rate

Response rate refers to the number of people who answered the questionnaire and interview guide divided by the number of people in the sample. It is usually expressed in the form of a percentage. Therefore, response rate is viewed as an important indicator of survey quality. Amin (2005) posits that higher response rates assure more accurate survey results. Questionnaires were distributed to employees of the Centre and patients. The response rate was as follows; a total of 103 (100%) questionnaires were distributed. In total 97 (94.2%) questionnaires were returned. Nine (9) interviews were to be conducted but four (4) interviews were conducted by the researcher giving a 44.4% response rate. This is confirmation that the collected data was representative of the views of the respondents and could be relied on to generalize the findings of the study to make conclusions and recommendations.

Table 3: Response rate

Questionnaires	Response rate	Interviews	Response rate
Administered questionnaires	103	Proposed interviews	5
Returned Usable Questionnaire	97	Actual interviews	5
Percentage response rate	94.2%	Percentage response rate	100%
Overall Response Rate	97.1%		

Source: primary data

From table 3 above, it can be observed that the overall response rate of 97.1% comprising of 94.2% response rate from the respondents who answered questionnaires and 100% response rate from the interviews. Amin (2005) argues that the overall rate equal to 50% is adequate enough while the study recorded 97.1% response rate which was adequate.

4.3 Demographic Characteristics

To present sample characteristics, frequency distributions were used to indicate variations of respondents based on gender, marital status, age, religion and level of education. The sample characteristics are presented basing on the responses in Tables 5 to 9.

4.3.1 Respondents by Gender

Frequency tabulation was used to present the gender distribution of the respondents in table 4 below.

Table 4: Distribution of Respondents by Gender

		Frequency	Percentage
Valid	Male	61	62.9
	Female	36	37.1
Total		97	100.0

Source: Primary data

The results from Table 4 above show that 61 (63%) of the respondents were females whereas 36 (37%) were males. From the findings, it is apparent that the males were more responsive compared to their female counterparts implying that, there were more male staff and patients at Kisenyi Health Centre compared to the female staff and patients. A summary of the gender distribution is presented in pie-chart figure 2.

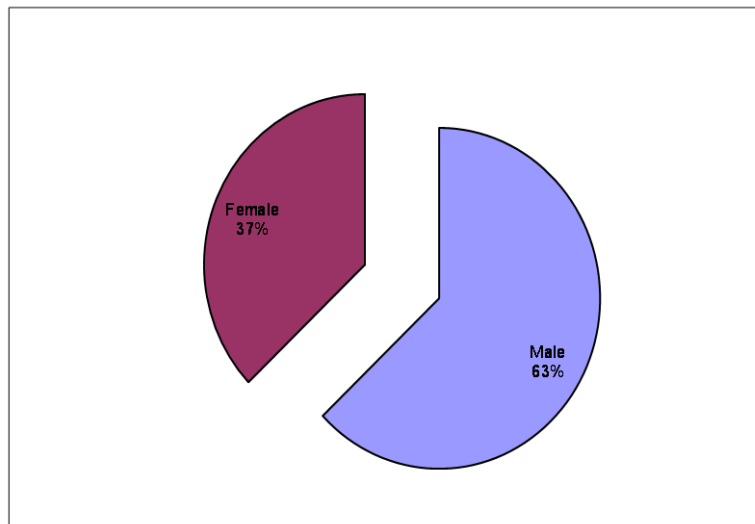


Figure 2: Distribution of Respondents by Gender

4.3.4 Respondents by Marital Status

Frequency tabulation was used to present the marital status distribution of the respondents.

Table 5 below presented the results:

Table 5: Marital Status Distribution

	Frequency	Percentage
Single	27	27.8
Married	45	46.4
Divorced	15	15.5
Separated	10	10.3
Total	97	100.0

Source: Primary data

From the results in Table 5, 46.4 % of the respondents comprised of married respondents, 27.8% consisted of respondents that were singles, 15.5% constituted of divorced respondents and 10.3% of the respondents were separated. From the results above, the respondents who were married were more responsive compared to their counterparts. This is because they comprised of the largest fraction of the sample for the study. From the results, it can be deduced that marital status affected ones adherence to ART given that the majority of the respondents were married who might have not disclosed their HIV status to their spouses and would favour keeping their status a secret from their partners. This undermines their adherence to ART because of the secretive nature of their HIV status. A summary of the results is presented in the doughnut in figure 3.

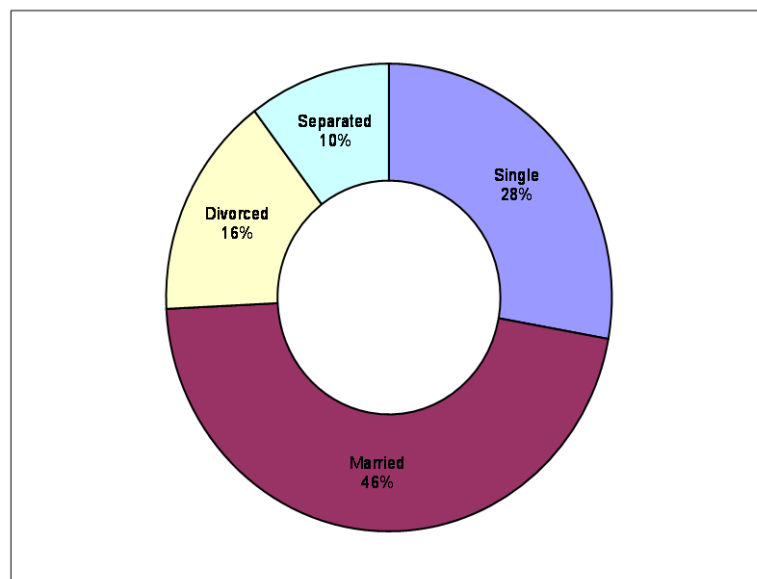


Figure 3: Distribution of Respondents by Marital Status

4.3.5 Respondents by Level of Education

Frequency tabulation was used to present the level of education distribution of the respondents. Table 6 below presented the results:

Table 6: Level of Education

	Frequency	Percentage
Primary	19	19.6
Secondary	32	33.0
Diploma	19	19.6
Degree	22	22.7
Postgraduate	5	5.2
Total	97	100.0

Source: Primary data

According to the results in Table 6, the majority of the respondents 32 (33%) possessed secondary level of education, 22.7% were degree holders, for those who had attained primary level of education and diploma, they each accounted for 19.6% and 5.2% were postgraduate holders. From the findings, the majority of the responses were acquired from the degree holders, diploma and postgraduate holders. This implies that data was collected from respondents who were able to provide the required information about adherence to anti-retroviral therapy. From the results it is clear that dealing with patients who were educated, this would make it possible for health officers to provide health education. A summary of the results is presented in the pie-chart in figure 4.

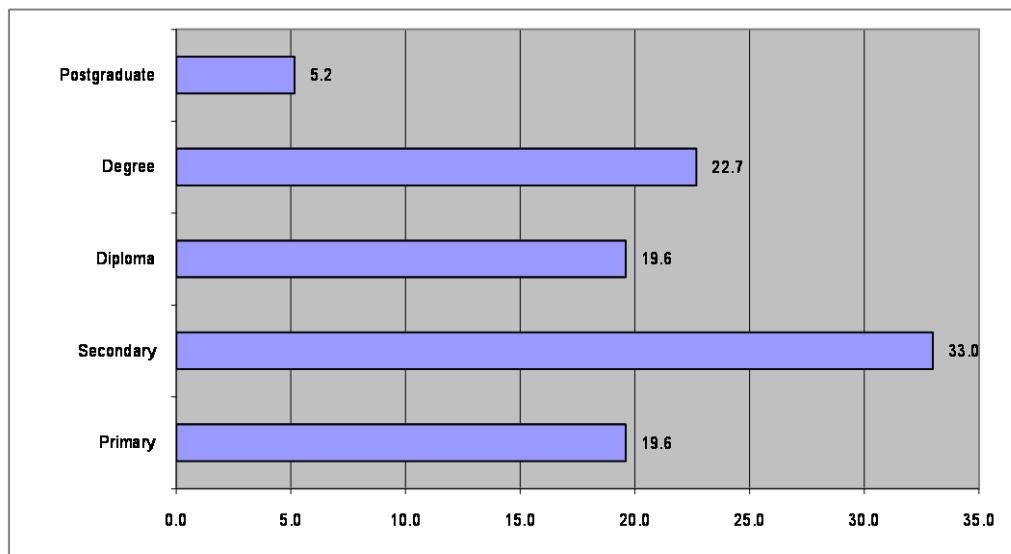


Figure 4: Distribution of Respondents by Level of Education

4.3.2 Respondents by Age Group

Frequency tabulation was used to present the age group distribution of the respondents in Table 7 below.

Table 7: Age Group

		Frequency	Percentage
	20-39	43	44.3
	40-49	35	36.1
	50+	19	19.6
Total		97	100.0

Source: Primary data

From the results in table 7 above, the majority of the respondents (44.3%) belonged to the 20-39 years age group, followed by those in the 40-49 years age group (36.1%), then those in the 50 years and above age group (19.6%). From the results, it is clear that close to half of the respondents were in the 20-39 years age group which is evidence that the majority of the respondents were youths and young adults. This is confirmation that ones age influenced their perceptions towards adherence to ART whereby adults would prefer to adhere compared to the youths who are stigmatised and live in self denial. However, this would also be determined by organisational factors since they provide health education, training, guidelines, infrastructure among others. A summary of the age group distribution in the pie chart in figure 5.

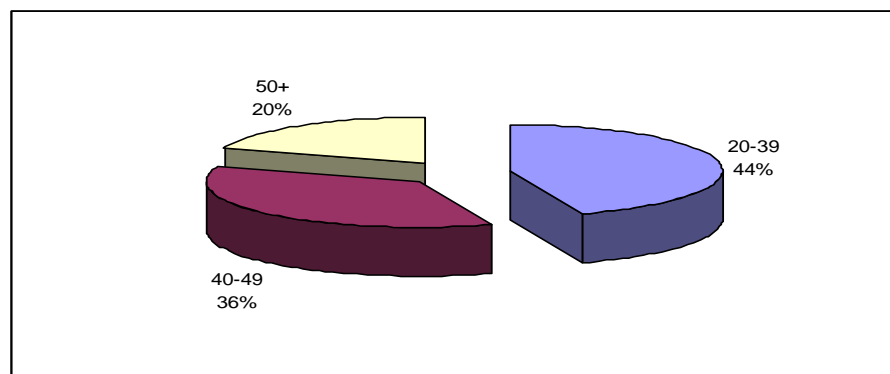


Figure 5: Distribution of Respondents by Age Group

4.3.3 Respondents by Religion

Frequency tabulation was used to present the religion distribution of the respondents. Table 8 below presented the results:

Table 8: Religion Distribution of Respondents

	Frequency	Percentage
Protestants	43	44.3
Catholics	21	21.6
Moslems	33	34.0
Total	97	100.0

Source: Primary data

In regard to religion of the respondents, 44.3% were Protestants, 34% were Moslems and 21.6% were Catholics. From the results, the majority of the respondents were Protestants which is implication that the Protestants and Moslems were more likely to contract HIV/AIDS compared to the Catholics much as, the Moslems were also more likely to adhere to anti-retroviral therapy. However, it also be noted that religion can have a negative effect on adherence to ART in that it shapes the spiritual beliefs of the followers not to adhere believing that they would be healed by divine power. Conversely, this should be supported by the availability of health care provider services, necessary health facilities and health systems. A summary of the results is presented in the doughnut in figure 6.

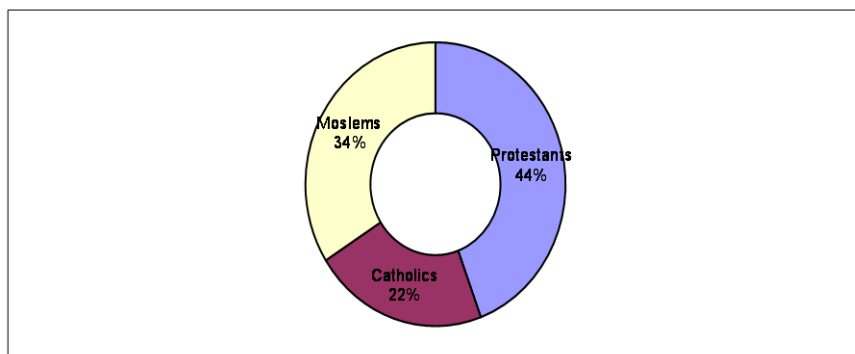


Figure 6: Distribution of Respondents by Religion

4.4 Contribution of Health Care Provider towards Adherence to ART among HIV/AIDS patients

In order to evaluate the contribution of health care provider towards adherence to ART among HIV/AIDS patients, item mean and frequencies percentage results were generated to show the average response of the respondents on each item. The items were attached on a five point Likert scale. The results are presented Table 9. below: Table 9: Respondents' Views on Health Care Provider

Item	SA	A	NS	D	SD	Mean	SD
We have a good relationship with health care providers in the ART clinic.	71%	25%		1%	3%	4.55	0.86
	69	24		1	3		
Health workers have a good attitude towards HIV/AIDS patients on ART	62%	29%	5%	3%	1%	4.44	0.86
	60	28	5	3	1		
Patients receive health education talks and counselling on adherence, treatment and disease.	74%	19%			7%	4.56	0.87
	72	18			7		
Health care providers report to work early and leave appropriate time in the ART clinic.	38%	48%	8%	1%	4%	4.15	0.85
	37	47	8	1	4		
Average	61.3	30.2	3.4	1.3	3.9	4.425	0.86
	60	29	3	1	4		

Source: Primary data

From the results in table 9, the mean scores above one (>3) represents agree while less than three (<3) represents disagree whereas, the standard deviation score more than one (>1) means divergence in opinion while less than one (<1) means communalities in opinion.

From the results on the contribution of health care provider towards adherence to ART among HIV/AIDS patients, 93 (96%) of the respondents agreed that they had a good relationships with health care providers in the ART clinic (Mean=4.55). This is implication that dialogue had been established between patients and health officers which was important in supporting adherence to ART. From the results, 91% (88) agreed that health workers had good attitude towards patients (Mean=4.44), which confirmation that the health officers possessed the required skills and competences required when handling patients. According to

the results, 93% (90) agreed that patients received health education talks and counselling on adherence, treatment and disease (Mean=4.56).

This is justification that that centre provided the necessary information to patients using different channels so as adhere to ART. From the results, 86% (84) of the respondents agreed that health care providers report to work early and leave on appropriate time in the ART clinic (Mean=4.15). This is evidence that there was effective and efficient service delivery at the centre given that those responsible kept time to avoid delays during service delivery. The results on the contribution of health care provider factors towards adherence to ART among HIV/AIDS patients imply that health care provider factors were paramount in fostering adherence to ART among HIV/AIDS.

4.4.1 Testing Hypothesis One: Health Care Provider have a Positive Effect on Adherence to ART

To study the relationship between health care provider and adherence to ART, Pearson’s correlation test was used and the results are presented in Table 10 below.

Table 10: Health Care Provider and Adherence to ART

		Health care provider	Adherence to ART
Health care provider	Pearson Correlation	1	.365**
	Sig. (2-tailed)		.000
	N		97
Adherence to ART	Pearson Correlation	.365**	1
	Sig. (2-tailed)	.000	
	N	97	

****.** Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data

Correlation results indicated a significant and positive relationship between health care provider and adherence to ART ($r = 0.365^{**}$, $p < .01$). The results indicate that there is a weak

significant positive correlation between health care provider and adherence to ART at 0.365** with a significance level of 0.000 which is less than the level of 0.01. The correlation results between health care provider and adherence to ART are supported by the multiple regression results of Beta=.110 which revealed that health care provider determined the change in adherence to ART. The hypothesis that health care provider factors significantly influence adherence to ART is accepted. This implies that when there is commitment by management to ensure that the health care provider factors are in place and delivered adequately, this will enhance the adherence to ART among HIV/AIDS patients.

This position was also shared by the senior managers and some of the clinicians who revealed that health care provider factors was the first step that the Centre used to promote adherence to ART among HIV/AIDS patients.

The results are supported by the Sr. In-charge who revealed that interpersonal relationships, good attitude, health education and time management were paramount in fostering adherence among HIV/AIDS patients.

4.5 Research Question Two: Contribution of Health Facility to Adherence to ART among HIV/AIDS Patients

In order to evaluate the contribution of health facility towards adherence to ART among HIV/AIDS patients, item mean results were generated to show the average response of the respondents on each item. The items were attached on a five point Likert scale. The results are presented Table 11 below:

Table 11: Respondents' Health Facility

	SA	A	NS	D	SD	Mean	SD
The clinic is in the reach of all clients to access medication	39%	40%	10%	4%	6%	4.01	1.06
	38	39	10	4	6		
The waiting time for patients receiving ART is appropriate	33%	44%	9%	10%	3%	3.91	1.06
	32	43	9	10	3		
The working hours for the health facility are convenient for patients on ART	47%	44%	4%	3%	1%	4.30	0.81
	46	43	4	3	1		
The environment at the health facility is conducive for patients.	46%	31%	11%	8%	3%	4.06	1.09
	45	30	11	8	3		
The health facility has good infrastructure to run the activities e.g. Consultation rooms	62%	22%	7%	5%	4%	4.28	1.09
	60	21	7	5	4		
Average	45.6	36.3	8.45	6.2	3.5	4.11	1.02
	44	35	8	6	3		

Source: Primary data

From the results in table 11, the mean scores above one (>3) represents agree while less than three (<3) represents disagree whereas, the standard deviation score more than one (>1) means divergence in opinion while less than one (<1) means communalities in opinion.

According to the results in table 10 above, 79% of the respondents were in agreement that the clinic was in the reach of all clients to access medication much as 10% were not sure and 10% were in disagreement (Mean=4.01). This is evidence that the clinic's location was easy to access by patients to receive treatment. From the results, 77% agreed that the waiting time for patients receiving ART was appropriate, whereas, 9% were not sure and 13% disagreed that the time was appropriate (Mean=3.91). On the general view, patients being attended to did not spend too much time waiting much as there were cases when they waited for long.

In regard to whether the working hours for the health facility were convenient for patients on ART, 91% agreed that they were convenient, 4% were not sure and 4% disagreed (Mean=4.30). This is evidence that the clinic offered services to the patients in a convenient manner. As to whether the environment at the health facility was conducive for patients, 77% of the respondents agreed, 11% were unsure and 11% disagreed to the notion that the

environment at the health facility was conducive for patients (Mean=4.06). This is evidence that the environment at the centre was comfortable for patients to receive treatment. From the results, there was agreement from 84% of the respondents that the health facility had good infrastructure to run the activities whereas, 7% were not sure and 9% disagreed that this was the case (Mean=4.28).

The results clearly show that the health facility factors had a positive effect on adherence to ART among HIV/AIDS patients.

4.5.1 Testing Hypothesis Two: Health Facility enhance Adherence to ART

To study the relationship between health facility towards adherence to ART, Pearson's correlation test was used and the results are presented in Table 12 below.

Table 12: Health Facility to Adherence to ART

		Health facility	Adherence to ART
Health facility	Pearson Correlation	1	.565**
	Sig. (2-tailed)		.000
	N		97
Adherence to ART	Pearson Correlation	.565**	1
	Sig. (2-tailed)	.000	
	N	97	
**.			<i>Correlation is significant at the 0.01 level (2-tailed).</i>

Source: Primary data

Correlation results indicated a significant and positive relationship between health facility and adherence to ART ($r = 0.565^{**}$, $p < .01$). The results in the above table indicate that there is a strong and statistically significant positive correlation between health facility and adherence to ART at 0.565^{**} with a significance of 0.000 which is less than the level of 0.01. The correlation results between health facility and adherence to ART are supported by the multiple regression results (Beta=.515) which revealed that health facility ranked

highest in determining the change in adherence to ART. The correlation results point to the fact that health facility are paramount in ensuring effectiveness and efficiency to adherence to ART. Thus the hypothesis that facility factors significantly contribute to the adherence to ART among HIV/AIDS patients is substantiated.

In agreement with quantitative results, the clinical officers pointed out that in order for a centre to realise adherence to ART among HIV/AIDS patients there is need to put in place the required infrastructures, providing a conducive environment for patient among others.

4.6 Research Question Three: Contribution of Health Care System to Adherence to ART among HIV/AIDS patients

In order to evaluate the contribution of health care system to adherence to ART among HIV/AIDS patients, item mean results were generated to show the average response of the respondents on each item. The items were attached on a five point Likert scale. The results are presented Table 13 below:

Table 13: Health Care System

Item	SD	D	NS	A	SA	Mean	SD
Drugs are always available every time we attend the clinic.	59%	26%	12%	1%	2%	4.34	0.91
	57	25	12	1	2		
Staff are always available to attend to patients during clinic days	46%	33%	7%	8%	5%	4.46	0.87
	45	32	7	8	5		
Average	52.6	29.4	9.8	4.6	3.6	4.4	0.89
	51	29	10	5	4		

Source: Primary data

The mean scores above one (>3) represents agree while less than three (<3) represents disagree. The standard deviation score more than one (>1) means divergence in opinion while less than one (<1) means communalities in opinion.

The results on whether drugs were always available every time patients attended the clinic, 85% of the respondents agreed, much as 12% were unsure and 3% were in disagreement. In regard to whether staff were always available to attend to patients during clinic days, 79% agreed, 7% were unsure and 13% disagreed.

From the results, it is clear that the management of the centre ensured that drugs are availed to patients at all times much as this depended on stocks available. Likewise, in order to ensure effective and efficient service delivery, the centre ensured that staff were always available to offer services to the patients.

4.6.1 Testing Hypothesis Three: Health Care System greatly contribute to Adherence to ART

In order to assess the effect of health care system on adherence to ART among HIV/AIDS patients, Pearson’s Correlation test was used to generate the results for objective three. To investigate the relationship among the constructs a Zero-order correlation table was generated. The Pearson correlation coefficient (r) was employed to establish the relationship between health care system factors and adherence to ART.

Table 14: Health Care System and Adherence to ART

		Health care system	Adherence to ART
Health care system	Pearson Correlation	1	.480**
	Sig. (2-tailed)		.000
	N		97
Adherence to ART	Pearson Correlation	.480**	1
	Sig. (2-tailed)	.000	
	N	97	
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary data

The correlation results in table 14 above indicated a moderate positive significant correlation between health system and adherence to ART among HIV/AIDS patients at Kisenyi health centre IV. ($r=0.480^{**}$ $p < 0.05$). The study revealed that there is a moderately strong and statistically significant positive correlation between health system and adherence to ART at 0.480^{**} with a significance of 0.000 which is less than the level of 0.01. This means that having drugs available every time patients attend the clinic and availability of staff during clinic days, other factors remaining constant is likely to improve adherence to ART among HIV/AIDS patients by 48.4%. From the results, it was revealed that efforts by management had been made to ensure good relationships with patients, good attitude towards patients and time management when delivering health service which had a positive effect on the adherence of the patients to ART. Thus the hypothesis that health system factors affect/change adherence to ART at the Health centre is supported. The correlation results between health system and adherence to ART are supported by the multiple regression results in table 15, $Beta=0.296$ which revealed that health system factors determined a change in adherence to ART.

The qualitative results from the different respondents were in support of the quantitative results which revealed that the centre operated a staff schedule that ensured that staff was available to attend to patients much as in regard to the availability of drugs, there was occurrence of shortages of some drugs.

4.7 Regression Model

A regression analysis was carried out to examine the extent to which health care and health facility predicted adherence to ART among HIV/AIDS patients. The overall potential of the health care, health facility and adherence to ART, were presented using the regression model

in the table below. Thus, regression analysis was carried for the study to establish the total effect of the study variables on adherence to ART.

Table 15: Regression model

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.052	.092		.563	.574
health care	.066	.026	.110	2.529	.012
heath facility	.465	.060	.515	7.761	.000
health system	.283	.064	.296	4.451	.000
Dependent Variable: Adherence to ART					
R	.367				
R Square	.341				
Adjusted R Square	.326				

Source: Primary data

According to Table 15, health care, heath facility and health system predict 32.6% of the adherence to ART among HIV/AIDS patients (Adjusted R Square = .326). The regression model was significant and thus reliable for making conclusions and recommendations. The most significant predictor of the performance of adherence to ART among HIV/AIDS patients was heath facility (Beta= 0.515, Sig. = 0.000) followed by health system (Beta= 0.296, Sig. = 0.000) and then followed by health care (Beta= 0.110, Sig. = 0.012). The findings revealed that, health system and heath facility were strong predictors of adherence to ART among HIV/AIDS patients.

Change in heath facility led to .515 an increase in adherence to ART among HIV/AIDS patients, change in health care led to .110 enhancement in adherence to ART among HIV/AIDS patients whereas, a change in health system led to a 0.296 increase in adherence to ART among HIV/AIDS patients. These results were in line with correlation results implying that adherence to ART among HIV/AIDS patients significantly depends on health care, heath facility and health system.

Model

$$\text{Adh} = 0.052 + 0.066\text{hcf} + 0.465\text{hff} + 0.283 \text{hsf} + e$$

Where Adh= adherence to ART, hc= health care, hf= health facility, hs= health system, e=error

A change in health care led to 0.066 increase in adherence to ART; a change in health facility led to 0.465 increase in adherence to ART; and a change in health system led to 0.283 increase in adherence to ART whereas, adherence to ART was fixed at 0.052 without health care, health facility and health system.

A patient said, "I take drugs at the right time, right doses and when I get side effects of drugs like vomiting, body itching, body rash I come back to the facility and see the clinicians for treatment".

4.8 Adherence to ART

Frequency tabulation was used to adherence to ART at Kisenyi Health Centre as presented in table 4.7 below:

Table 16: Adherence to ART

Item	SD	D	NS	A	SA	Mean	Stand Dev
I take the right doses of medication every day.	59%	26%	12%	1%	2%	3.77	0.689
	57	25	12	1	2		
I take drugs at the right time always	46%	33%	7%	8%	5%	3.7	0.684
	45	32	7	8	5		
I take my drugs at the right intervals always	41%	31%	5%	10%	12%	3.61	0.789
	40	30	5	10	12		
Average	48.8%	29.9%	8.2%	6.5%	6.5%	3.69	0.72
	47.3	29.0	8.0	6.3	6.3		

Source: primary data

The results in table 16 above revealed that 85% of the respondents agreed that they took the right doses of medication each day. (Mean=3.77), 79% attested that they took drugs at the

right time (Mean=3.70) and 72% agreed that they always took drugs at the right intervals (Mean=3.61). The standard deviation results of less than 1 provide evidence that the results obtained on adherence to ART applied to the Centre. The global mean results of 3.69 and global standard deviation of 0.72 is further confirmation that there was some level of adherence to ART.

In agreement with quantitative results, the qualitative results revealed that;

The staff at the health facility said that, “We educate patients on how to take drugs at the right time, in the right doses and at the right intervals”. On the other hand, the top management staff supported that organisational factors enhanced adherence to ART”.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study examined organisational factors affecting adherence to ART in HIV/AIDS patients at Kisenyi H/C IV. Health care provider, health facility and health care system characterized the organisational factors affecting adherence to ART in HIV/AIDS patients while adherence to ART was characterized by dimensions of right doze, right time and frequency. This chapter consists of the summary of findings, discussion of findings, conclusions and recommendations according to the three objectives of the study as noticed below.

5.2 Summary of the Findings

The study sought to examine organisational factors towards adherence to ART in HIV/AIDS patients at Kisenyi H/C IV. This was carried out by way of unpacking the factor components of organisational factors and thereafter related to adherence to ART. Data was collected by way of a self administered questionnaire which was closed ended and the data was analyzed with the use of the Statistical Package for Social Scientists which was used to present results in tabulations of frequencies, item means, correlations and regression analysis. The majority of the respondents belonged to the 20-39 years age group, whereby the majority of the respondents were female. In terms of marital status, the majority were married and had attained secondary level of education or were degree holders. Of the respondents, the Protestants composed the biggest majority.

5.2.1 Contribution of Health Care Provider factors towards Adherence to ART among HIV/AIDS Patients

The study showed a high significant relationship between health care provider and adherence to ART ($r=0.365^{**}$, $p<0.01$). Health care provider a was strong predictor of adherence to ART (Beta=0.110, Sig. =0.012). This is implication that relationships, health education and staffing were important in determining the right doses, right time and right frequency of patients' adherence to ART.

5.2.2 Contribution of Health Facility factors and Adherence to ART among HIV/AIDS Patients

The findings revealed a strong significant relationship between health facility and adherence to ART ($r=0.565$, $p<0.01$). Health facility was a significant predictor of adherence to ART (Beta=0.515, Sig=0.000). This shows that health facility in regard to accessibility, waiting hours, environments and infrastructure were paramount in determining adherence to ART.

5.2.3 Relationship between Health Care System factors and Adherence to ART among HIV/AIDS Patients

The correlation findings on the relationship between health care system and adherence to ART revealed a positive significant relationship ($r=0.480$, $p<0.01$). Similarly, the health care system was a strong predictor of adherence to ART (Beta=0.296, Sig =0.000). This is implication that drug availability, trainings and guidelines enhanced adherence to ART.

5.3 Discussion of the Findings

A discussion of the findings was carried out following the study objectives. Here the researcher assessed how the findings of the study were in agreement or disagreement with extant literature that was reviewed.

5.3.1 Contribution of Health Care Provider factors towards Adherence to ART among HIV/AIDS Patients

From the findings, it was revealed that establishing a good relationship patients, good health workers' attitude towards HIV/AIDS patients and health workers reporting early at work is likely to improve adherence to ART among HIV/AIDS patients. This is also supported by the correlation results which revealed a significant and positive relationship between health care provider towards adherence to ART was observed. These findings are in line with Sabate (2009) who asserts that patients become frustrated with health care providers when misunderstandings occur, treatment becomes complex, side-effects go unmanaged and the patient is blamed for being a "bad patient" A recent meta-analysis focusing on physician communication and patient adherence to treatment showed that patients whose physician communicates poorly have a 19% higher risk for non-adherence compared to patients whose physician communicates well.

Additionally, the findings showed that patients received health education talks and counselling on adherence, treatment and disease, accepted that Health workers had a good attitude towards HIV/AIDS patients on ART, agreed that they had a good relationship with health care providers in the ART clinic, Findings of this study concur with Di-Matteo, Giordani, Lepper & Croghan. 2002) who emphasized that interventions focusing on communication training for physicians is essential and effective. The study showed that (79.4% of the respondents agreed that Health care providers report to work early and leave on appropriate time in the ART clinic, this supported by Marjolen (2007) who opines that Staff shortages could harm the provision and quality of health care in Uganda, so staff retention and motivation are crucial.

5.3.2 Contribution of Health Facility factors and Adherence to ART among HIV/AIDS Patients

The findings revealed that having the clinic in reach of all clients to medication, reducing waiting time, having convenient working hours, a conducive environment and good infrastructure is likely to improve adherence to HAART among HIV/AIDS patients. The correlation results revealed a significant and positive relationship between health facility and adherence to ART which was confirmation that health facility factors determined the effectiveness and efficiency of adherence to ART. These findings are supported by the findings of WHO (2012) which indicated that there are a number of aspects of a clinical setting that may be associated with adherence including transportation, waiting time, convenience of scheduling appointments, integrated services and confidentiality. Such findings seem to concur with findings by Sasaki et al (2012) whereby results took over one hour to reach health facilities in half of patients on ART in the study. Because of this long distance to access to health facilities in Mumbwa, patients who missed doses might report that the distance from home to the district hospital or rural health centres caused the disruption in ART adherence.

The findings further revealed that the environment at the health facility is conducive for patients and accepted that the health facility has good infrastructure to run the activities e.g. Consultation rooms. Obua et al, (2011) in Multiple ART Programs Create a Dilemma for Providers to Monitor ARV Adherence in Uganda concluded that where there was duality of programs at a facility, it was found that the capacity of health providers to perform optimally was adversely affected.

5.3.3 Health Care System factors and Adherence to HAART among HIV/AIDS

Patients

The findings showed that having drugs available every time patients attend the clinic and availability of staff during clinic days, other factors remaining constant is likely to improve adherence to ART among HIV/AIDS patients. These findings concur with studies of the correlates of adherence to ART have consistently found that adherence is influenced by variables at multiple levels of the social-ecological framework, including factors inherent to the individual, the individual's relationships, and characteristics of the physical and social environment (Ammassari, Antinori et al., 2012; Chesney, 2003; Fogarty et al., 2012; Ickovics et al., 2012b; Mills, Nachega, Bangsberg et al., 2006; Sankar et al., 2006; Vervoort et al., 2007). In line with the item mean results, the correlation results indicated a significant association between health care system factors and adherence to HAART among HIV/AIDS patients. Such findings confirm the Health belief model (HBM; Becker, 1974) that states that for people to adopt recommended physical activity behaviors, their perceived threat of disease (and its severity) and benefits of action must outweigh their perceived barriers to action.

Findings further revealed that drugs are always available every time we attend the clinic and that majority of the respondents agreed that staff are always available to attend to patients during clinic days, this seems to concur the review by Osterberg (Osterberg & Blaschke 2005), that found out that methods to improve adherence can be grouped into four broad categories, namely, (i) patient education, (ii) improved dosing schedule, (iii) increased opening hours of the clinic and shorter waiting time, and (iv) improved communication between physicians and patients. Patients who often miss appointments could benefit from assisted clinic schedule. The involvement of other healthcare workers such as pharmacists, nurses and behavioural specialists improve adherence (Simoni et al. 2010).

5.4 Conclusions

From the findings of the study, conclusions were drawn basing on the research objectives of the study. In regard to contribution of health care provider towards adherence to ART among HIV/AIDS patients, it can be concluded that attainment of adherence to ART in regard to right dose, time and frequency depended on the provision of health care provider factors promoted relationships, health education and staffing among HIV/AIDS patients. The study concluded that attainment of adherence to ART among HIV/AIDS patients in regard to right dose, time and frequency was determined by health facility which enhanced accessibility of the centre, waiting hours at the centre, the environment and the available infrastructure at the centre. From the findings, the study concluded that in order to realize adherence to ART among HIV/AIDS patients, there was need for the availability of health care system which promoted drug availability, trainings and use Ministry of Health guidelines.

5.5 Recommendations

5.5.1 Contribution of Health Care Provider factors towards Adherence to ART among HIV/AIDS Patients

Kisenyi health centre IV should continue to practice HIV/AIDS Care Best practices by MOH in their service delivery because this will give them a competitive edge (advantage) in the fight against HIV/AIDS in Uganda. MOH and KCCA stakeholders should provide trainings to health Care Providers which promotes adherence in order to recognise the crucial role they play in supporting, encouraging and walking with patients on their adherence journey. If access to a team of knowledgeable, sympathetic and understanding patient-centered Health Care Providers is available, patient-adherence to ART is enhanced.

5.5.2 Contribution of Health Facility factors and Adherence to ART among HIV/AIDS Patients.

MOH together with KCCA Stakeholders' should carry out satisfaction survey regularly so that Kisenyi health centre IV is not caught wrong footed with the patients defecting to other Health centres because of poor service delivery.

5.5.3 Health Care System factors and Adherence to ART among HIV/AIDS Patients

Kisenyi health centre IV management should benchmark their activities with MOH and other organizations in HIV/AIDS service provision so that they can learn best practices in HIV/AIDS Care. Adherence trainings are critical in improving knowledge, understanding, preparation for dealing with side effects and the long duration of treatment and in decreasing stigma. Adherence trainings are essential as they provide information about the disease, its progression, the correct doses of medication, and possible side effects: all of which are important for patients and help to ensure adherence to medication.

5.6 Limitations to the Study

- i) The study population comprised of busy respondents who were not willing to provide their responses. The researcher therefore made prior telephone bookings with such respondents to alleviate the challenge.
- ii) Respondents withholding information due to fear of being victimized. The researcher convinced the respondents that the information would be kept confidential and would only be used for academic purposes after showing them the letter from UMI.
- iii) Unwillingness of respondents to fill questionnaires. The researcher was in constant touch with the respondents and made sure reminders were sent to them to fill the questionnaires.

- iv) Respondents having a view of not obtaining any direct benefit from the research results. The researcher tried her level best to convince the respondents to spare some little time to answer the questions as this would benefit them in the long run when the results draw the attention of policy makers given that the research is in constant liaison with the exporters and government officials.

5.7 Areas for Further Research

This study concentrated on health care provider, health facility and adherence to ART among HIV/AIDS patients. Future research should attempt to widen the scope of the study to cover other health facilities in other regions to ascertain the findings.

The study adopted a cross sectional design which studied the state of affairs at Kisenyi Health Centre at a point in time. To study the true nature and quality of the effect of organisational factors on adherence to ART among HIV/AIDS patients, a longitudinal study is more appropriate.

From the findings, the regression analysis revealed that the model could only explain 32.6% in variance of adherence to ART among HIV/AIDS patients; a study should be carried out comprising of other factors which were not part of the model.

5.8 Contribution of the Study

According to the findings on organisational factors and adherence to ART among HIV/AIDS patients, the study was able to provide an insight in the role of organisational factors in promoting adherence to ART among HIV/AIDS patients at the Centre.

In regard to the findings on the association between health care provider and adherence to HAART among HIV/AIDS patients, the study was able to articulate the importance of health

care provider which was key in promoting adherence to ART among HIV/AIDS patients at the Kisenyi Health Centre.

The findings on the relationship between organisational factors and adherence to ART among HIV/AIDS patients revealed that the role played by organisational factors was key in promoting adherence to ART among HIV/AIDS patients at Kisenyi Health Centre.

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APPENDIX I

QUESTIONNAIRE PATIENTS ON HAART

ORGANISATION FACTORS AND ADHERENCE TO HIGHLY ACTIVE NTIRETROVIRAL THERAPY AMONG HIV/AIDS PATIENTS IN KISENYI H/C IV

Dear respondent

My name is Doreen Bakeiha, a student of Uganda Management Institute. As part of the requirement of the award of a master's degree in management studies, am carrying out research aimed at examining the organizational factors and adherence to Highly Active Antiretroviral Therapy among HIV/AIDS patients at Kisenyi H/C IV.

I therefore kindly seek your view in regard to the subject under study. I assure you that the any information provided will be purely used for academic purposes especially in writing an academic report (dissertation).

Therefore it will be handled with utmost confidentiality will be so grateful if relevant information is given

Thank you very much

Doreen Bakeiha

Researcher

PATIENT'S QUESTIONNAIRE

SECTION A: PATIENT DEMOGRAPHIC INFORMATION.

For Questions 1-4, please tick the most appropriate option to you.

Gender

Male

Female

Marital status

Single

Married

Divorced

Separated

3. Highest education level

Primary

Secondary

Diploma

Bachelors

Post graduate

Age

20-39

40-49

Above 50

Religion

Protestants

Catholic

Moslem

For the following statements, please indicate the extent to which you agree or disagree to the statement by ticking the most appropriate option that represents your opinion from the scale provided.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

No.	Statement	Strongly agree	Agree	Neutral	disagree	Strongly Disagree
SECTION B: HEALTH CARE PROVIDER FACTORS						
1	We have a good relationship with health care providers in the ART clinic.					
2	Health workers have a good attitude towards HIV/AIDS patients on ART					
3	Patients receive health education talks and counselling on adherence, treatment and disease.					
4	Health care providers report to work early and leave on appropriate time in the ART clinic.					
SECTION C: HEALTH FACILITY FACTORS						
5	The clinic is in the reach of all clients to access medication					
6	The waiting time for patients receiving ART is appropriate					
7	The working hours for the health facility are convenient for patients on ART					
8	The environment at the health facility is conducive for patients.					
11	The health facility has good infrastructure to run the activities e.g. Consultation rooms					
SECTION D: HEALTH SYSTEM FACTORS						
12	Drugs are always available every time we attend the clinic.					
13	Staff are always available to attend to patients during clinic days					
SECTION E: ADHERENCE ASSESMENT						
14	I take the right doses of medication every day.					
15	I take drugs at the right time always					
16	I take my drugs at the right intervals always					

APPENDIX II
INTERVIEW GUIDE FOR KEY INFORMANTS

SECTION A: HEALTH PROVIDER FACTORS

Do you have good relationship with the patients that you see? yes
Is the number of health workers enough for the HIV clinic?

Yes No
If No why?

Do you offer health education for clients? Yes No
If yes how often...
If No why...

SECTION B: HEALTH FACILITY FACTORS

4. Do you consider the facility accessible? Yes No
If no why...

5. For how long do patients wait in the clinic?

1hr: 30 minutes to 3hr: 40 minutes

Above 3hr: 40 minutes

Is the environment at the health facility conducive for patients? Yes No
If No why?

Is the infrastructure sufficient to support the clinic?

Yes

No

If No why?

SECTION C: HEALTH SYSTEM FACTORS

8. Do patients on ART receive all prescribed drugs by doctors?

Yes

No

If No, why?

Do the staffs undergo regular training on HIV/AIDS care?

Yes

No

If No why...

Do you have a treatment policy, adherence guidelines for patients on ART?

Yes

No

If No, why?

Is there follow up on guidelines by KCCA or MoH?

Yes

No

If no why...

What do you think can be done to improve adherence to 95% national target?

.....
.....

How do you ensure that patients adhere to their medication?

.....
.....

Thank you for your time and cooperation.

APPENDIX IV

DOCUMENTARY REVIEW CHECKLIST

Documents Reviews

Key: A- Always, F=Frequently, O=Occasionally, R=Really, N=Never

General's Policy and Reports					
Are there well documented patient complaints?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Do staff meet set targets?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Mandate of the Health centres	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
What is the overall adherence to HAART?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Attendance register					
Do staff come late to work?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Are staff always absent from work stations	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Meeting minutes					
Is there a policy on health care provider factors?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Is there a policy on health facility factors?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Is there a policy on health system factors?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Is business on organisational factors discussed by management?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Journal articles					
Is there discussion on organisational factors?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>
Is there a relationship between organisational factors and adherence on HAART?	<i>A</i>	<i>F</i>	<i>O</i>	<i>R</i>	<i>N</i>

APPENDIX V

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.