

**A STUDY TO DETERMINE THE QUALITY OF LIFE OF
PEOPLE LIVING WITH HIV/AIDS BEFORE AND
DURING ANTI RETROVIRAL TREATMENT**

BY

**LIKANDO LIKANDO
BScN, RN**

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Nursing
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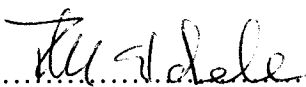
I, Likando Likando, do hereby solemnly declare that this Dissertation represents my own work and that, it has not previously been submitted for any Degree or indeed not to any other University.

Signed: 

Likando Likando

Date: 10th July 2007

We have read this Dissertation and have approved it for examination.

Date: 10th July 07. Signature: 

Date: Signature:

Supervisor:

Mrs. Patricia M. Ndele

APPROVAL

This Dissertation of Likando Likando is approved as a fulfilment in part of the requirements for the award of Degree of Master of Science in Nursing by the University of Zambia.

Signature	Date	Title/Position held
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<i>Itchalele</i>	<i>10th July 07</i>	<i>Supervisor</i>
.....		

DEDICATIONS

I would like to thank God for having accorded me this opportunity to carry out this important study.

This work is dedicated to my beloved wife Vivian Malila and daughter Melody Wakumelo Likando for their never-ending support and love through out the period of study. This made it easy for me to carry out my duties as a husband, parent and student.

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ABSTRACT

The quality of life in People Living with HIV/AIDS (PLWHA) prior to Highly Active Antiretroviral Therapy (HAART) is said to be poor. However, Anti-retroviral Therapy (ART) has changed the natural history of HIV/AIDS from a disease characterized by the rapid and torturous downhill progression to a chronic illness. HIV/AIDS has substantially increased the demand for health services and negatively affected the quality of life (Gill et al 2002).

The aim of the study was to determine quality of life for PLWHA after commencement of ART. The Null hypothesis of the study was that the PLWHA would have a better quality of life after commencement of HAART. The study focused on people living with HIV/AIDS in Livingstone particularly those that were obtaining medical services from Livingstone General Hospital. The study assessed the quality of life of PLWHA before and during ART. It also established intentions on how to improve the quality of life of PLWHA before and during ART. The domains assessed included, Disease, Treatment, Pain, Energy, Physical, function, sleep and mental health domains.

The study design used was retrospective. Total samples of 210 files for PLWHA were randomly selected from the registry at Livingstone General Hospital by systematic random sampling. Data were collected by using a Medical Outcome Scale Human Immunodeficiency Syndrome (MOS-HIV) questionnaire. The questionnaire was used as a checklist to extract data from the medical record files.

The results of the study showed that the majority of PLWHA before ART experienced poor quality of life. In the disease domain, it was observed that disease domain had 176 (84%) PLWHA who were ill looking before ART, only 132 (63%) were still ill looking after 12 months of ART ($P < 0.001$). The number of PLWHA with Cd4 cell count less than 200 cells/mm³ before ART was 161 (77 %) and at 12 months ART, the number reduced to 83 (40%). The Haemoglobin level assessment also followed the same trend of improvement, as the number of PLWHA with low haemoglobin reduced from 181 (86.1%) to 125 (60%).

Health status domain was described by the Physicians as poor or better. 46 (22%) were described as poor health status before ART and the number reduced to 15 (7%) after 12 months of ART. ($p < 0.001$)

The treatment domain looked at the side effects experienced by PLWHA during ART. The majority of the PLWHA, 128 (61%) experienced side effects. The most common side effect was neuropathy 54 (26%). Therefore, side effects can cause considerable discomfort and non adherence to ART hence negatively affecting the quality of life.

Pain domain showed that 147 (70%) of PLWHA complained of pain before ART only 63 (30%) did not complain. During 12 months of ART, 114 (54%) had no pain and only 96 (46%) had pain ($p < 0.001$).

The study showed that 99 (47.1%) had sleep disturbances before ART. During ART only 18 (7%) had sleep disturbances. ($p < 0.001$).

Physical and role function domains assessed the ability of PLWHA to walk with ease or difficulty. Before ART, 126 (66.7%) of PLWHA had walking problems and after 12 months ART The number reduced to 70 (33.3%) and the number with no walking problems increased to 140 ($P<0.001$).

Ability of PLWHA to go to work was also assessed. The study results showed that 45 (60%) were not able to go to work and only 30 (40%) were able to go for work before ART. At 12 months of ART only 56% (42) PLWHA were not able to go for work. The number of PLWHA who were able to go for work increased slightly from 30 (40%) to 33 (44 %) ($p<0.05$). At 12 months only 102 (48%) complained of weakness. ($p<0.001$)

Physical body function was assessed as normal but abnormal temperature was reported. Before ART the number of PLWHA with abnormal temperature was 47 (22%) and with normal was 163 (78%). After 12 months on ART the number of PLWHA with abnormal temperature reduced to 19 (19%) and normal improved greatly as it rose to 191 % (91%) $p<0.001$.

Mental appearance was assessed as normal and abnormal. The number of PLWHA described as abnormal was 195 (83%) before ART. At 12 months of ART, the number dropped to 113 (54%) ($p<0.0001$). Orientation was assessed as either disoriented or oriented. The majority, 158 (73%) were disoriented at commencement of ART ($P>0.05$) as compared to 52 (24.8%) after 12 months on ART.

The study results show that HAART improved the quality of life for PLWHA in a poor setting in the city of Livingstone. Before commencement of ART, it was evident that

quality of life was poor as shown by high rate of opportunistic infections, weakness and inability to walk. However, after commencement of ART, significant improvement in almost all the seven domains was recorded. The study results show that the quality of life of these people greatly improved hence the Null hypothesis was accepted.

ABBREVIATIONS

ART	-	Anti-retroviral Therapy
ARV	-	Antiretroviral
CD4	-	Cell Difference
CBoH	-	Central Board of Health
CSO	-	Central Statistic Office.
DAPS	-	Drug Assistant Programme.
MOH	-	Ministry of Health
HAART	-	Highly Active Antiretroviral Therapy
HIV/AIDS	-	Human Immune Virus/Acquired Immune Deficiency
NVP	-	Nevirapine
NGO	-	Non –Governmental Organisation
OI	-	Opportunistic Infection
PHC	-	Primary Health Care
STD	-	Sexually Transmitted Disease
TB	-	Tuberculosis
PLWHA	-	People Living with HIV/AIDS
PIs	-	Protease Inhibitors
NNRTIs	-	Non-Nucleoside Reverse Transcriptase Inhibitors
UNAIDS	-	United Nations Programme on HIV/AIDS

USAID	-	United States Agency for International Development
VCT	-	Voluntary Counselling and Testing
WHO	-	World Health Organization
ZDHS	-	Zambia Demographic Survey.
Chi-q	-	Chi square
MOS (HIV)	-	Medical Outcome Scale human immunodeficiency syndrome
QOL	-	Quality of life

CHAPTER ONE

1.0 BACK GROUND INFORMATION

The Human Immunodeficiency Virus (HIV) infection was a condition that caused a chronic, progressive disease that led to early death if not treated. HIV was characterized by persistent viral replication over an extended period of time in which patients experienced few or no symptoms, while their immune system was under siege. Over the course of 5 to 10 years, HIV typically resulted in significant immune depletion and dysfunction, chronic symptoms and vulnerability to a variety of opportunistic conditions that characterized HIV/AIDS conditions (Queri – HIV/AIDS, 2004).

In the late 1970s, researchers mixed monkey sarcoma viruses with newly cultured monkey immuno-suppressive viruses to see if they could grow in human cell cultures' the HIV organism grew. According to Ogura et al (1978), the discovery of AIDS is traced far back to the late 1970s when an epidemic of rare sarcomas began in human populations.

Pratt (1995) reported the first patients with AIDS in the United Kingdom and United States of America and was diagnosed in 1981. In the United States, in September 1982, more than two cases used to be diagnosed everyday. The epidemic had been established in many high income countries since 1980s including USA

and Western Europe. AIDS was seen virtually in every country of the world. According to World Health Organisation, the cumulative global number of AIDS cases by end of 1995 was 1 291 810 (WHO 1995).

There was not enough data to show how HIV/AIDS began in Africa but the first AIDS case in Zambia was diagnosed in 1985 (Msiska 1993). Three quarters of current AIDS cases were in the developing countries.

Official measures to prevent AIDS were mainly based on the belief that AIDS was a sexually transmitted viral disease. In both developed and undeveloped countries measures were directed towards promotion of safe sex with condoms, use of clean syringes, blood screening before transfusion, prevention of mother to child transmission, promoting caesarean section for delivery and stopping breast-feeding and circumcision (Roberto 2000).

There was still no HIV/AIDS vaccine despite much effort, being made time and money spent in trying to develop a vaccine. More than 20 years into the epidemic only one vaccine called AIDS VAX had been completed to large-scale clinical trials and it failed both categories (Steve 2004). Hence, the discovery of AIDS vaccine still remained elusive and a formidable scientist challenge.

Treatment advances had yielded important new AIDS therapies, but the cost and complexity of their use put them out of reach for many people. The first AIDS

drugs were developed in 1987, among them Zidovudine, were mainly monotherapy. In the mid 1990s, combination therapy was introduced and managed to drop deaths by 70% in the USA (The Nation 2003).

In 1996, a new strategy referred to as Highly Active Anti-retroviral Therapy (HAART) involving combination of at least three drugs was introduced. These drugs did not cure HIV infection but decreased the amount of virus in the body and extended life (CBoH 2004).

The ART drugs were administered in two regimens. The first line drug regime was administered in individuals who had never received ARV drugs in the past. They included Nucleotide Reverse transcriptase Inhibitors (NRTI) along with a third drug from the Non – nucleotide Reverse Transcriptase Inhibitors (NNRTI) class. The second line of drugs was used when there was treatment failure with first line drugs.

They included at least three drugs to minimize the risk of cross resistance (WHO 2004). According to Dalia Acosta (2003), the combination therapy or “cock tail” therapy which consisted of several ARV drugs was the most effective treatment for delaying the onset of AIDS and improving the quality of life for patients. Available ARV drugs belonged to two major classes, namely Reverse Transcriptase Inhibitors and Protease Inhibitors.

The reverse transcriptase inhibitor was further divided into 2 groups:

- a) Nucleoside Reverse Transcriptase Inhibitors (NRTIs)
- b) Non Nucleoside Transcriptase Inhibitors (NNRTIs)

Nucleoside Reverse Transcriptase Inhibitor drugs acted by blocking an enzyme required to make copies of HIV inside infected cells, examples include Zidovudine (AZT, ZDV), Stavudine (d 4T), Lamivudine (3 TC), Didanosine (dd 1), Zalcitabine (ddc) and Abacavir. The common side effects were fatty changes in the liver, mitochondrial Toxicity, Anaemia, and Peripheral neuropathy.

Non nucleoside reverse transcriptase inhibitors include:

Nevirapine (NVP), Efavirenz (EFV), Delavirdine (DLV). These may cause skin rash. In severe form Stevens Johnson syndrome had been reported.

Protease inhibitors were a class of ARV agents that competitively competed for HIV proteinase or enzyme responsible for liberating active proteins from protein precursor esigned gagpol. Examples include Saquinavir (SQV), Ritonavir (RTV), Indinavir (IDV), Nelfinavir (NFV), Amprenavir (APV), Lopinavir / Ritonavir. Common side effects included abnormal body fat distribution, which manifested as thinning of the arms, legs and face, and or deposition of fat in the abdominal or shoulder regions (Cipla 2005).

The main objective of this study was to determine the impact of Triomune on quality of life of People Living with HIV/AIDS (PLWA). Triomune was a combination of 3 drugs commonly used in the management of Human

Immunodeficiency Virus (HIV) infection. Stavudine and lamivudine belonged to the nucleoside analogue class of antiretroviral drugs. Both drugs acted by terminating the growth of the DNA chain and inhibiting the reverse transcriptase of HIV. Nevirapine was a non-nucleoside reverse transcriptase inhibitor. It acted by directly inhibiting reverse transcriptase.

Each tablet of Triomune contained half of the commonly prescribed daily doses of Stavudine, Lamivudine and Nevirapine. All three drugs were to be administered twice daily, permitting a fixed-dose combination to be formulated. With the availability of this combination formulation, patients could better able to adhere to triple drug regimens, thereby enhancing compliance. Triomune was indicated for the treatment of HIV infection, once patients had been stabilized on the maintenance regimen of Nevirapine 200 mg twice daily, and had demonstrated adequate tolerance to Nevirapine.

Intensive clinical and laboratory monitoring included liver function tests, which were essential especially at baseline level, prior to dose escalation of Nevirapine, and at two weeks post dose escalation. In some cases, hepatic injury had progressed despite discontinuation of treatment.

Triomune was contraindicated in patients with clinically significant hypersensitivity to any of the components contained in the formulation. Triomune was also contraindicated in patients who were just initiating therapy with Nevirapine. These patients required a lead-in dose of Nevirapine 200 mg once, whereas this

formulation contained the maintenance dose of Nevirapine 200 mg twice daily (Cipla 2005).

WHO had categorized HIV disease in four stages. The characteristics of each stage were as follows;

- First stage - asymptomatic HIV infection, and persistent generalized lymphadenopathy.
- The second stage – Herpes zoster, minor muco-cutaneous manifestation, recurrent respiratory infections, and weight loss more than 10% of body weight.
- Third stage-severe bacterial infection such as pneumonia, oral candidiasis, chronic diarrhoea, prolonged fever more than one month, leukoplakia, pulmonary tuberculosis, weight loss by 10% of body weight.
- Stage four-candidiasis, cryptococcosis, cryptosporidiosis, cytomegalovirus disease, HIV encephalopathy, HIV wasting syndrome, Kaposi's sarcoma, lymphoma, atypical mycobacteriosis disseminated, mycosis, extra pulmonary tuberculosis, pneumocystis carini pneumonia, salmonella septicaemia, toxoplasmosis.

WHO recommended starting ART in resource poor setting in individuals who were in;

- WHO stage IV of HIV disease regardless of CD4 Count
- WHO stages II, III of HIV disease, or I with a CD4 Count below 200 per cubic millimetre.

Table 1: Regional Statistics for HIV/AIDS, End Of 2005

Region	Adults & children living with HIV/AIDS	Adults & children newly infected	Adult (15-49) prevalence*	Deaths of adults & children
North Africa & Middle East	440,000	64,000	0.2%	37,000
Asia	8.3 million	930,000	0.4%	600,000
Oceania	78,000	7,200	0.3%	3,400
Latin America	1.6 million	140,000	0.5%	59,000
Caribbean	330,000	37,000	1.6%	27,000
Eastern Europe & Central Asia	1.5 million	220,000	0.8%	53,000
North America, Western & Central Europe	2.0 million	65,000	0.5%	30,000
Global Total	38.6 million	4.1 million	1.0%	2.8 million

Access to needed services remained quite low and uneven around the world.

Although access to Anti-retroviral (ARV) treatment had increased over the last few years, only 15% of people living with HIV/AIDS in need of ARVs in low- and middle- income countries were estimated to be receiving treatment as of June.2005. This represented only 970,000 of the estimated 6.5 million people in need of antiretroviral treatment in these countries.

WHO has estimated that 5.5 million people in the developing world urgently needed life saving ARV treatment only 440 000 (8%) of these people who were in need were accessing ARV drugs in developing countries. In Africa, only 4% of those who needed treatment were receiving ART. On 22nd September 2003, WHO, UNAIDS and the Global Fund declared the lack of access to HIV treatment a global health emergency.

In December 2003, the World Health Organization (WHO) announced a strategy called 3 by 5 plan aiming to bring ARV treatment to three million people living with HIV in developing countries by 2005. The target was to have 700, 000 people on ARVs by December 2004, 1.6 million people by June 2005 and three million by December 2005. WHO would be working in partnership with UNAIDS, the Global Fund, The US Presidential Fund for AIDS Relief, World Bank, Governments and Non – Governmental Organizations. The total amount of money pledged came to \$ 3 415 015 180 584.

By June 2004, there were 29 countries including Zambia using the AIDS drugs and diagnostic services. 15 thousand health workers trained to provide ARV therapy and 440 thousand people were receiving ARV treatment in developing countries. Never before in history of the epidemic had so much money been available to finance treatment and care for HIV positive people and never before had anti-retroviral medicines been made so cheaply and plentifully available. Even so, 8000 people were

dying everyday from a disease which could be contained, but which all too often was not (WHO 3 by 5 2004).

At the end of 2003 it was estimated that between 730, 000 and 1.1 million Zambians were living with HIV/AIDS with 59% of adult infections occurring in women and approximately 150, 000 infections in children. By the end of October 2005, the estimated number of PLWHA on HAART in Southern Province was 4, 534. (MOH/CBoH 2005). In Livingstone the number of PLWHA on HAART had risen from 22 to 1, 403 by end of December 2005 (MoH 2003- 2006).

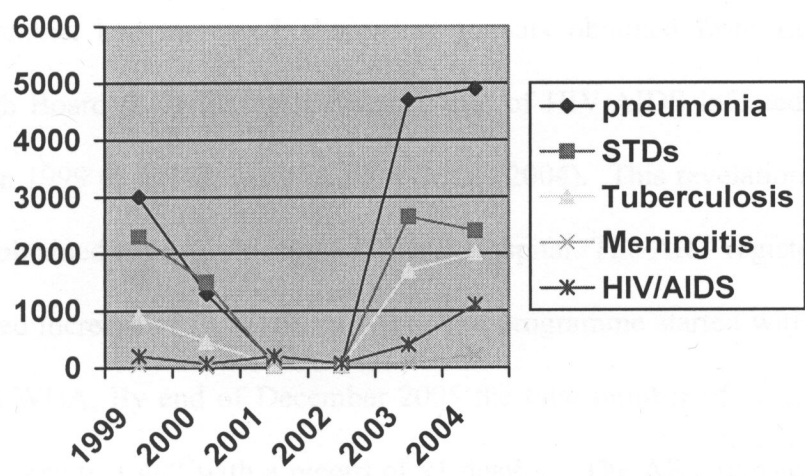
Zambia's target was to have about 100, 000 individuals living with HIV/AIDS to access ARV drugs by December 2005 (Mazuwa 2003). However, this target had not been achieved as only 40, 000 Zambians were receiving HAART by the end of December 2005 (National AIDS Council of Zambia 2006).

In response to the HIV/AIDS scourge, the Zambian Government had set up strategies in the public sector to prolong life and productivity in HIV/AIDS clients. The introduction of anti-retroviral therapy in public institution was guided by the principle that "the effective control of HIV/AIDS pandemic lay in the prevention, treatment and support, in order to reduce transmission of HIV and minimize the personal and social impact of HIV/AIDS" (Ministry of Health 2004). The Zambian Government commenced the Anti-retroviral therapy pilot programme in Ndola and Lusaka in

October 2002. By April 31 2003, Ndola Central Hospital had 56 patients and U.T.H 80 patients on anti-retroviral drugs.

Ndola Central Hospital and University Teaching Hospital were designated as referral and quality control centres for the whole country. The Anti-retroviral programme was initiated in some provincial health centres in 2003. In Southern province the ART programme commenced at Livingstone General Hospital in August 2003 following training of staff and establishment of supporting infrastructure, equipment and drugs. As at October 20, 2003, there were 22 PLWHA on HAART at Livingstone General Hospital, all aged between 17 to 55 years (CBoH 2004). According to CBoH (2004), ART drugs were not life saving, they prolonged life and represented the best available treatment for people living with HIV/AIDS today. They offered benefits, which included increased survival rate and improved quality of life by controlling increase of HIV cells in the body, delayed clinical progression of disease; thus improved the patient's immunity and reduced opportunistic infections. But Records at both the Livingstone General Hospital and Livingstone District Health Board showed a marked increase of opportunistic infections. Tuberculosis rose from 923 cases in 1999 to 1, 986 cases in 2004, Meningitis from 11 cases to 74 cases, and Pneumonia from 3,083 to 5,236. The number of STD cases increased from 2, 371 to 2, 502 cases within the same period (Refer to figure A below).

FIGURE A: PREVALENCE RATE OF HIV/AIDS AND OPPORTUNISTIC INFECTIONS IN ZAMBIA



Source: MoH/ CBoH - LDHMB 1999-2004, HIA1 Disease aggregation data.

With the introduction of anti-retroviral therapy and management of opportunistic infections in August 2003, it was expected that the prevalence rates would decrease to lower levels but the current pattern indicated that the morbidity and mortality rates were on the increase. Among those put on anti-retroviral therapy treatment, 91 people living with HIV/AIDS out of 1 403 PLWHA still died. A record of 91 deaths within a year was quite alarming taking into consideration that the clients were already on ARV therapy. It appeared to contradict the aims of anti-retroviral therapy of prolonged life and increased productivity. The increase in STIs could indicate that people were not practicing safe sex.

1.1 STATEMENT OF THE PROBLEM

The prevalence rate of HIV/AIDS in Livingstone City, which was the Tourist capital of Zambia, had increased. According to data obtained from Livingstone District Health Board (LDHB) the prevalence rate of HIV/AIDS infected people rose from 140 in 1999 to 1, 141 cases in 2004 (MOH 2004). This revelation was supported by data obtained from Livingstone General Hospital. The ART register which showed a marked increase of PLWHA on ART. The programme started with a total number of 22 PLWHA. By end of December 2005 the total number of cases on anti-retroviral drugs rose to 1,403 with a record of 91 deaths. The ART register also showed that they were more PLWHA aged between 15 – 49 years receiving anti-retroviral therapy. These represented the most productive age group of the society. The records revealed the following:

- 1, 270 adults are currently on therapy, 716 females and 554 males (MOH 2006).
- There are about 656 adults who had been on Triomune treatment for at least 12 months since August 2003. The rest had been on treatment for less than twelve months.

1.3 General Objective:

The general objective of this study was:

- To determine the quality of life of people living with HIV/AIDS before and during Triomune anti-retroviral therapy.

1.4 Specific Objectives:

The specific objectives were to:

1. To determine quality of life of PLWHA before Triomune ART.
2. To establish quality of life of PLWHA during Triomune ART.
3. To recommend interventions to improve the quality of life of PLWHA on ART.

1.5 Research Question

Had the quality of life changed for people living with HIV/AIDS who were on Triomune anti-retroviral therapy in Livingstone?

1.6 Hypothesis

1.6.1. Null Hypothesis:

People living with HIV/AIDS would have had better quality of life once they were commenced on Triomune ARV Treatment.

1.6.2. Alternative Hypothesis:

People living with HIV/AIDS would have been poor quality once they were commenced on Triomune ARV treatment.

1.2. SIGNIFICANCE OF THE STUDY

Since the establishment of ARV therapy programme in August 2003 at Livingstone General Hospital, no research study had been carried out to evaluate how the quality of life had changed for people living with HIV/AIDS who had been on ARV therapy for at least 6 months and more. The administration of ARVs in a resource poor setting such as Zambia, in the presence of high levels of paediatric and adult malnutrition, increased disease burden and unemployment. It was imperative therefore to determine and document ART effects on prolonged life, decreased morbidity, absenteeism from work and school, rate of hospital admissions and assessed adherence and adverse effects. Some of the drugs that had been administered such as AZT are highly toxic and hence the need to find out their effects.

The findings of the study would help the Government and concerned stakeholders formulate ways of improving administration of ART in a resource poor setting.

OPERATIONAL DEFINITION OF TERMS

1. **Health** - Defined as wellness in all areas of life (physical, mental, emotional, social, and spiritual).
2. **Absenteeism** – Someone not being at school or work when they should be.
3. **Accessibility** – A condition of having to obtain drugs and health services from the ARV centre, making them available to clients.
4. **Adherence** – This term is used to mean compliance with on ARV drug regimen, taking the drugs correctly (correct number of pills, taken at the correct times), with consideration to food requirements and without missing doses.
5. **AIDS** – Acquired Immune Deficiency Syndrome. AIDS is the end of the clinical spectrum of HIV infection. It occurs when the immune system of a person who is HIV infected becomes so suppressed that they are vulnerable to a variety of illnesses.
6. **HIV** – Human Immunodeficiency Virus. This is the virus that causes HIV infections and AIDS.
7. **PLWHA** - Refers to people who have HIV virus confirmed by positive HIV laboratory test. The letters PLWHA stand for People Living With HIV/AIDS.
8. **Anti-retroviral drug resistance** – The Virus being no longer sensitive to one or more of the anti-retroviral drugs being taken. This occurs when the virus

continues to multiply and mutates in the presence of a drug regimen that is not effective or that is not being taken correctly and consistently. Once the virus develops resistance to a specific drug, that drug will no longer be effective and often other anti-retroviral drugs in the same class will also be ineffective.

9. **Anti-retroviral therapy (ART)** – Treatment with drugs that specifically attack the HIV virus. There are different classes of ARV drugs that act in different ways and at different sites or in the virus.
10. **CD4 cell count** – A specialised type of lymphocyte cells which form an important component of the immune system. They are the most common “target” cells for the Human Immunodeficiency virus. HIV attacks these cells, infects them, and kills them. The primary way to determine the degree of immune damage from HIV is to measure the number and percentage of CD4 cells.
11. **Highly Active Anti-retroviral Therapy (HAART)** – The phrase and abbreviation used for anti-retroviral regimens that use effective combinations of three or more agents, usually from two or more drug classes in order to achieve the greatest suppressions of viral load for the most sustained period of time.
12. **HIV-RNA Level (viral load)** – A measure of the amount of virus present – usually measured in blood plasma – using a sophisticated molecular technique known as polymerise chain reaction or PCR. The unit of measurement is number of copies per millilitre (ml).

13. **Opportunistic Infections (OIs)** – Different infections that have the opportunity to occur when HIV damages the immune system. These common OIs seen in Zambia include; Tuberculosis, Meningitis, Pneumonias, Oral thrush, Diarrhoeal Diseases
14. **Prevalence** – Life's physical, mental, re-cast refers to the total number of cases of a disease or condition at a particular time whether new or old cases.
15. **Anaemia** – Haemoglobin concentration in blood of less than 13.5g/dl in male adults. 11.5g/dl in adult females.
16. **Health-related quality of life** – An individual's satisfaction or happiness with domains of life in so far as they affect or are affected by "health" as defined above. Health related quality of life can be distinguished from quality of life as we defined it earlier in that it concerns itself primarily with those factors that fall under the purview of health care system. Generally speaking, then, assessment of health related quality of life represents an attempt to how variables within the dimension of health (e.g., a disease or its treatment) relate to particular dimensions of life that have been determined to be important to people in general (health related quality of life) or to people who have a specific disease (condition specific health the effects of disease on physical, social/role, psychological/emotional, and cognitive functioning. Symptoms, health perceptions, and overall quality of life are often included in the concept domain of health related quality of life.

17. **Quality of life measurement** – Multi-dimensional concept that focuses on the impact of disease and its treatment on well being of an individual.
18. **Health / Wellbeing-** This is in all areas of life (physical, mental, emotional, social, and spiritual). Health according to this definition is a broad concept that subsumes the related concepts of disease, illness and wellness. When considered as a dimension or domain of quality of life, however, health is the best thought of in the narrower sense of factors that are generally considered to fall under the preview of health care providers, or that are likely to be the target of a health care intervention.
19. **Health Status** - An individual's relative level of wellness and illness taking into account the presence of biological or physiological dysfunction, symptoms, and functional impairment.
20. **Health Perceptions** (or perceived health status) - These are subjective ratings by the affected individual is status. Some people perceive themselves as healthy despite suffering from one or more chronic diseases, while others perceive themselves as ill when no objective evidence of disease can be found.
21. **Mood** - Describes a sustained emotional response that, when person's view of the world. Depression, anger, anxiety, and anger are emotions that sometimes coexist with physical illness, may affect individual's functional performance, symptom and health perceptions, and quality of life. Conversely, decreased

functional status may contribute to depressed mood in people with chronic lung disease.

22. Functional status – This refers to an individual's ability to perform normal daily function normal daily activities required to meet basic needs, fulfil usual roles, and maintain health and well being. Functional status subsumes related concepts of interest: functional capacity and functional performance. While functional capacity represents the individual's maximum capacity to perform daily activities in the physical, psychological, social, and spiritual domains of life, functional performance refers to activities people actually do during the course of their daily lives. A maximum exercise test measures physical capacity, while a self-report of activities of daily living measures functional performance.

Functional status can be influenced by biological impairment, symptoms, mood, and other factors. It is also likely to be influenced by health perceptions, for example, a person who would be judged to be well but who views himself as ill may have a low level of functional performance in relation to his capacity.

CHAPTER TWO: LITERATURE REVIEW

2.1. INTRODUCTION

Many efforts to initiate ARVs treatment programmes had been made worldwide in both developing and developed countries. All reviewed records showed massive gaps in the provision and access to ART medication. This confirmed the severity of the pandemic, which had since claimed millions of lives especially among the poor throughout the world of both the poor and rich and still continued to wipe many more from the planet earth.

2.2 QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS BEFORE ANTI – RETRO - VIRAL TREATMENT:

HIV/AIDS had substantially increased the demand for health services and negatively affected the quality of life. According to the study by Gill et al (2002) on relationship of HIV viral loads, CD4 counts, and HAART use to health-related quality of life involving 513 respondents, HIV impacted negatively on physical functioning and role function. The study results showed that patients with CD4 cell count of less than 200 had lower physical function of minus 8.8 points, role function of minus 9.3, health perceptions of minus 7.7 points than those with undetectable viral loads. The resurgence of diseases such as malnutrition, TB, diarrhoea and other opportunistic infections which were AIDS related illnesses were contributing to over 50% of bed

occupancy in most hospitals in East and Southern Africa. Health facility assessments suggest that the epidemic is crowding out patients suffering from conditions that were seemingly less severe than HIV/AIDS, thus denied them their right to care. Due to increased admission of HIV related illness, Kenya had seen increased mortality among patient, who were being admitted at later stages of illness (UNAIDS 2000). HIV prevalence among hospital patients was almost 33% in one Tanzanian Hospital (Haacker 2001). According to Seage et al (2002), in a study conducted in the United States of America on relationship of preventable opportunistic infections, HIV-1 RNA, and CD4 cell counts to chronic mortality opportunistic infections were found to be major cause of HIV- related deaths. The study showed that people with a history of opportunistic infections were over 28 times more likely to die 30 days or more after acute infection compared to those without such a history at a mortality rate of 66.7 vs. 2.3 per 100 persons. Opportunistic infections had a major impact on HIV – related deaths.

It had also been documented that before commencement of ART, PLWHA were more susceptible to infections. According to the results of cohort study by Seyler (2003), whose main objective was to compare the incidence rates of major causes of severe morbidity in patients with and without ART in Abidjan, it was discovered that the most frequent causes of severe illness in the groups were acute unexplained fever, severe bacterial diseases: 9.2 vs. 25, non-specific enteritis: 9.1 vs. 23 and tuberculosis: 2.4 vs. 6.9. The incidence of malaria was the same in both groups (2.4 per 100). The results also showed that the risk of infection increased with reduction in

CD4 cells. Patients with CD4 counts < 200 cells/mm³ were at an increased risk of life threatened opportunistic infections. Common infections included bacterial pneumonia, especially streptococcus pneumonia and haemophilus influenza and pulmonary tuberculosis (Negredo et al 2002).

Absenteeism begins before people develop full-blown AIDS. Reports indicated that the average person living with AIDS could be absent from work for up to 50 percent of their final year of life. Calculations had shown that in Botswana if the average person working in the health sector used 60 days of sick leave in their last years of life, the public sector could lose around 23, 000 work days to AIDS in 2003 and 31,000 in 2005. Additional absenteeism for attending funerals and care of dependants was likely to be considerable (Abt Associates South Africa 2000).

A study by Henry (2004) which was done in three countries, Burkina Faso, Rwanda and Uganda, calculated that AIDS would not reverse efforts to reduce poverty but increase the percentage of people living in extreme poverty from 45% in 2000 to 51% in 2015. The findings of the study revealed that falling incomes forced about 6% of house holds to reduced the amount of income; and almost half of households reported having insufficient food at times.

HIV/AIDS affected teachers as well. A study in Zimbabwe found that 19% of male teachers and almost 29% of female teachers were infected with HIV. It is also estimated that 17% of Mozambique teachers are HIV positive (Allafrica.com 2004).

2.3 QUALITY OF LIFE OF PEOPLE LIVING WITH HIV /AIDS DURING ANTI-RETRO-VIRAL TREATMENT:

A study conducted by Albert et al (1999) on quality of life in asymptomatic and symptomatic HIV infected patients in a trial of a ritonavir/ saquinavir therapy both drugs improved the patient's health related quality of life. Quality of life improved significantly in both groups regarding health distress, energy/fatigue, mental health, physical function and overall quality of life, despite an increase in reported symptoms. In another study by Allyn et al (2003) on health related quality of life in persons with HIV infection, in nine states of America involving 3, 778 persons showed that, factors associated with lower quality of life included old age, being female, infections, drug use, lower education, lower income and lower CD4 count. In multivariate analysis, lower CD4 count was the factor most consistently associated with lower health related quality of life.

According to Carr et al (2000), complex regimes and side effects affected both quality of life and adherence. Among the common of these side effects included generalized toxicity with multiple and lipo-dystrophy in about 50%. Carrier (2003) is of the view that HAART improved the quality of life. People with better quality of life had higher levels of adherence to HAART. In a study to examine the clinical immunological, virologic and social behavioural characteristics of HIV positive patients who started PI- based HAART treatment, it was discovered that over 63% of patients' CD4 count increased by 100 cells /mm³ or more, 43.3%

had to change their medication due to side effects (Negrado et al (2002)). Much progress had been made in making ART easier for patients to take in a consistent manner. In the mid to late 1990s, combination ART involved taking medication at least 3 times a day, often with food and water restrictions and high numbers of tablets. These complex regimens were gradually giving way to simpler regimens involving fixed dose combination tablets, which could be taken once daily (Becker et al 2002). Negrado et al (2002) reported improvement in quality of life assessed by questionnaires in 2 randomized studies in which protease inhibitors were switched to Nevirapine or to either Nevirapine or Efavirenz compared with continuing the protease inhibitor.

According to Michael (2001), HAART was effective at improving the physical wellbeing of PLWHA though it had little effect on the quality of their life. Pain severity was barely or not improved by treatment but depression was alleviated to a significant degree. Treatment failure, either intolerance or death occurred in up to 40% of the patients studied.

In another development, Swiss prospective studies in Switzerland found that patients who started therapy with CD4 count of greater than 350 cells /mm³ had 3.4% cumulative risk of progression to AIDS at 3 years compared to 4.7% in patients who started with 200 – 359 cells / mm³. The rate of virological failure was significantly higher if anti-retroviral therapy is started at CD4 count of less than 200 cells/ mm³ (Philips et al 2001).

A study by Carrier et al (2003) on Health related quality of life after one year of highly active Anti retroviral protease inhibitor therapy involving 1053 patients results showed that only 27% (63) patients showed a deterioration of health related quality of life at month twelve. Among the 40% (421) patients with a normal base line health-related quality, 11.5% (121) achieved a normal health-related quality of life at month 12. Logistic regression showed that factors independently associated with a normal health related quality of life at month 12 were normal base line health-related quality life, baseline CD4 count < 500 cells/mm³, undetectable HIV-RNA levels, lower number of self reported symptoms such as pain.

According to Park (2002), toxicities from anti-retroviral therapy (ART) were common and may necessitate changes in medication. The majority of these toxicities are not life threatening but could affect quality of life and negatively impact patient's willingness to adhere to their regimens (Park 2002). A review of published cohort studies that examined modification of initial anti-retroviral regimens found that anti-retroviral intolerance and toxicity was the most common reason for changing therapy in 8 to 12 studies. Park (2002) stated that gastrointestinal disturbance such as nausea, vomiting cited toxicity leading to a change in an initial anti-retroviral regime. Investigators followed an Italian cohort of HIV infected patients started a first anti-retroviral regimen examined the outcomes of patients whose regimens were based on Non-Nucleoside reverse Transcriptase

inhibitors. They found that clinical drug toxicity occurring in 18% of patients started on Nevirapine based regimen and in 10% of patients started on Efavirenz based regimen, was the most common reason for changing an initial anti-retroviral regimen (Negredo, 2002). In contrast to gastro-intestinal disturbance in protease inhibitor based regimens hypersensitivity (e.g. rash, and hepatitis) was the most common reason for discontinuing a Nevirapine based regimen (12%) and central nervous system toxicity was the most common reason for discontinuing an Efavirenz based regimen (5%). The majority of ART modifications occurred within three months of started ART. The majority of the patients in these cohort studies were on protease inhibitor based regimen (O'Brien et al 2003).

Observations and experience had shown that many people who were commenced ART died early. This notion was confirmed by Donald Abrans M.D., director of AIDS programme at San Francisco General Hospital who observed that a large number of population chose not to take any anti-retroviral because they had watched all their friends went on “anti-retro-viral band wagon and died”, (Medical News 2003).

In addition the ART cohort collaboration study involved studies of patients starting a first ART regimen estimating the risk of an AIDS defining illness or death within 3 years of starting ART. Among those patients with virologic suppression 6 months after starting ART, the estimate of risk ranged from 14%

for those with a 6 months CD 4 count of < 25 cells / ul to 2% for those with 6 months CD 4 count of > 350 cells /ul (Chene et al 2003). HIV therapy early treatment extended life. The projected life expectancy of a 37 year old patient receiving early highly active anti- retroviral therapy was nearly three years longer than that of a patient receiving delayed therapy (Archives of Internal Medicine 2002). A preliminary analysis of toxicity and causes of death among patients receiving HAART in Botswana by Ndwapi (2003) indicating opportunistic infections were leading causes of morbidity and mortality. The overall death rate in February 2003 was 10.7% (33 of 306) with an average time to death, after starting treatment, of 2.4 months. Of those who died, 72% were women. The overall baseline CD4 count of patients who died during the period was 25 cells/mm³ (66% were below 50). The causes of mortality among the 33 patients was wasting with chronic diarrhoea (21.2%); wasting without chronic diarrhoea (9%); pulmonary TB (18.1%); AZT-induced anaemia (12.1%); nevirapine-induced hepatitis (3%); cryptococcal meningitis (9%); TB meningitis (6%); Kaposi's sarcoma (9%); PCP (3%); pseudomonas pneumonia (3%); non-AZT-induced anaemia (3%); and suicide (3%). The authors noted that limited blood supplies for transfusion were reflected in the high rate of AZT-associated anaemia. More frequent monitoring of haemoglobin for patients on AZT may also have been beneficial.

It had been established that medications used to treat co-morbid illness often interacted with anti-retrovirals. A prime example was the interaction of rifampin,

a first –line drug for treatment of tuberculosis with both protease inhibitors and NNRTIs (Lopez et al 2002). This interaction may have been overcome by dose adjustment in the case of Efavirenz or substitution of rifabutin for rifampin in the case of protease inhibitors. Other examples of important drug interaction included cholesterol lowering “statins” and protease inhibitors and ergot derivatives and protease inhibitors (Fichtenbaum et al 2002).

Some studies had tried to explore the experiences of people on ART. A study by International HIV/AIDS Alliance (2004) on the experiences of treatment users and health care workers in Zambia reported that adherence to ARVs was generally high. Most of the people interviewed had been on ARVs for relatively short period of time and had started their treatment in the context of advanced HIV disease. Others were worried about the possibility of damage due to side effects. In the same study, stigmatisation and lack of confidentiality were also reported. It was also found that at the start of ARV treatment, the patients reported that the main criteria established was whether or not individuals could stick to and maintain their regime, was whether the cost of ARVs could be guaranteed.

CONCLUSION

Literature review shows that Anti-retroviral therapy had made dramatic impact on the quality of life of people living with HIV/AIDS by decreasing associated morbidity and mortality. The advantages of ART outweighed the disadvantages despite their adverse

effects which sometimes led to death. The review also showed gaps in ART medication in almost every country world wide. It is evident that most of quality of life studies had been conducted in developed countries with sound economies. Few retrospective and prospective studies on HIV health related quality of life have been conducted in both resource rich and poor settings: comparing life before and after six months of ART. It was also evident that no study had been conducted in Zambia to determine how the quality of life of people living with HIV/AIDS had changed after being on ART for more than six months. It was for this reason that the researcher was prompted to carry out this study.

This study would attempt to add to the existing body of knowledge on quality of PLWA before and during ART.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

The study design was a retrospective longitudinal analytical study which was aimed at comparing the quality of life of PLWA before (at the baseline) and at 12 months of Triomune ART. It focused on medical records of PLWA who had been taking HAART for a period of 12 months. The study aimed in detecting variations in quality of life between the two periods (at month 1 and months 12). The study further examined the association between the different variables. It involved review and analysis of medical records for PLWA aged between 15 and 49 years.

3.2 RESEARCH SETTING

A study site was the physical location in which data collection took place in a study (Polit et al 1997). The study was carried out in Livingstone city at Livingstone General Hospital. Livingstone was the tourist capital of Zambia situated in Southern province. It had a population of about 115,273 people. The population had 85 % of it living in urban areas and 15% was in the peri-urban area. The city had five urban clinics. Livingstone General Hospital served both as first referral and second referral hospital. The study was conducted at the medical clinic ART centre at Livingstone General Hospital.

3.3 STUDY POPULATION

A target population consisted of total group of people met a designated set of criteria of interest to the researcher (Dempsey et al 2000). The study population comprised 210 people living with HIV/AIDS aged between 15 and 49 years who were on Triomune therapy. They were selected because they were regarded as the most productive members of the society. The impact of HIV/AIDS made this age group to be less productive physically, socially and economically. The study involved reviewing and analysing of the 210 respondents' medical records at Livingstone General Hospital Medical Clinic. No interviews were conducted.

3.4 SAMPLING AND SAMPLE SIZE DETERMINATION

Sample selection was the process of selecting a portion of the population to represent the entire population (Treece et-al 1986). The respondents were selected by systematic sampling method. The sampling frame consisted of a list of 656 people living with HIV/AIDS aged between 15 and 49 years who were on HAART at Livingstone General Hospital (MoH 2006). One random number between 1 and 10 was picked using the lottery method. Then using systemic sampling, every third medical file of respondents aged 15 to 45 years from the random number until 210 medical files were selected. This was followed by analysis. Every K^{th} medical file where k referred to the sample interval which was calculated by the formula $K = \text{Total population} \div \text{sample size desired}$. The total population of PLWHA aged 15 to 49 years on Triomune ART

was 656, and sample size desired was 210. Hence the interval was 656 divided by 210 = 3.12 Round off to 3.

3.5 DATA COLLECTION TECHNIQUE

The relevant data was obtained using a MOS – HIV questionnaire. The questionnaire was used as a checklist to extract data from the medical record files. The questionnaire included 7 dimensions (physical and role function, pain, energy, mental health, treatment, disease, and sleep)

The questionnaire had three sections. Section A was on socio-demographic characteristics of the respondents, section B, MOS HIV 7 domains before commencing Triomune. Section C, MOS HIV 7 domains at 12 months of Triomune therapy. The questionnaire was modified to collect data on additional areas of interest.

Two counsellors in ART centre were engaged as research assistants. It involved review and analysis of medical records for 210 respondents on Triomune therapy aged 15 to 49 years at the base line (month 1) and 12 months later. The Medical Outcome scale HIV (MOS-HIV) questionnaire was employed to obtain data at baseline before commencing Triomune therapy and at scheduled 12 month visit.

3.6 VALIDITY AND RELIABILITY

To ensure the quality of the data collection instrument, it was important to establish its validity and reliability. Validity referred to the degree to which an instrument measured what it was intended to measure (Polit and Hungler, 1995). The instrument consisted of questions on each variable to be measured. In measuring the validity of the instrument, the questions in the questionnaire were checked by experts in ART, to see if they brought out the responses on the variables to be measured so that conclusions could be drawn with respect to the sampled population. The instrument was also pre-tested to determine whether they brought out desired information in a pilot study held at Livingstone Medical clinic.

3.7 PILOT STUDY

A pilot study was conducted at Livingstone Medical Clinic. The study sample constituted 10 medical record files of PLWA on HAART, aged 15 – 49 years. This was helpful in detecting any flaws or gaps in the content of the data and necessary corrections were made. It was found that in all the 10 files, pain was not always classified as mild, moderate or severe but just as pain. However, no changes were made to the questionnaire regarding classification of pain.

3.8 DATA ANALYSIS

Data analysis was done by EPI Info, SPSS, and using column counts, cross tabulation reflecting frequencies, percentages, chi-square and p-values. For easy analysis, pain was analysed as pain or no pain and location of pain.

3.9 ETHICAL CONSIDERATION

The study involved review and analysis of medical records files hence there was - no need for consents from clients. In this case therefore, the researcher observed and ensured the following:

1. Permission to carry out the study was obtained from the UNZA Research Ethics committee and Livingstone Hospital Health Management Board to carry out the research.

The files were reviewed and analysed in privacy and the information collected was kept in strict confidence. Anonymity was also observed by using serial numbers on the checklist and questionnaire and no names and addresses were included on the check-list, questionnaire and reports.

3.10 LIMITATIONS OF THE STUDY

The limitations of this study were:-

- Some relevant details were not found in the medical files (not captured by the physician on examination) such as pain whether mild, moderate or severe hence the degree of pain was not easy to classify in some cases.
- Limited resources such as time and funding for the research were not adequate making it difficult for me to adequately conduct the research and submit the dissertation on time.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 DATA ANALYSIS

Data analysis was the systematic organization and synthesis of research hypothesis using data (Polit et al 1999). The data were to be stored on the computer and analyzed using the EPI – info and SPSS programme and scientific calculator. Appropriate Statistical tests were used in this study was McNemar's Chi square test. The data was displayed in 2x2 tables with 1 degree of freedom. Decision rule reject Null hypothesis if p value is equal or less than 0.001. Hence P value was used to ascertain a degree of significance. Mean and mode were utilised to highlight the average and most frequent occurring scores. CD4 cell count and Hb levels were significant as predictors of disease progression.

4.2 PRESENTATION OF FINDINGS

Table 1 shows the demographic presentation of the subjects involved in the study terms of sex, age, marital status, residence, education, occupation and religion. A total number of 210 subjects were studied of which 91 were males and 119 females.

DISEASE DOMAIN

Table 2: General condition before ART by general condition after 12 months on ART

	General condition after 12 months		
	ART		
	Not ill looking	Ill looking	Total
General condition before ART	N (%)	N (%)	N (%)
Ill looking	51 (65.4)	125 (94.7)	176 (83.8)
Not ill looking	27 (34.6)	7 (5.3)	34 (16.2)
Total	78 (100.0)	132 (100.0)	210 (100.0)

Table 2 shows general disease condition before starting ART by general disease condition after starting ART in terms of ill looking and not ill looking. Of the 210 (100%) subjects, a total of 176 (84%) subjects were ill looking before starting ART and only 132 (63%) were ill looking after 12 months on ART.34 (16%) were not ill looking before starting ART and 78 (37%) were not ill looking after starting art.

Chi-Sq = 61.9 p<0.001

Table 3 CD4 Count before ART by CD4 Count after 12 months on ART

	CD4 count after 12 months ART		
	<200	≥200	Total
CD4 count before ART	N (%)	n (%)	N (%)
<200	74 (89.2)	87 (68.5)	161 (76.7)
≥200	9 (10.8)	40 (31.5)	49 (23.3)
Total	83 (100.0)	127 (100.0)	210 (100.0)

A total of 161 (77%) subjects had their CD4 count below 200. 49 (23.3%) had their CD4 count above 200 before starting art. 127 (60%) subjects had their CD4 count above 200 after starting ART and only 83 (40%) had their CD4 count below 200.

Chi-Sq = 61.76 p<0.001

Table 4: Haemoglobin count before ART by Haemoglobin count after 12 months on ART

	Haemoglobin count after 12 months		
	ART		
	Normal and above	Not normal	Total
Haemoglobin count before ART	N (%)	n (%)	n (%)
Not normal	64 (75.3)	117 (93.6)	181 (86.2)
Normal and above	21 (24.7)	8 (6.4)	29 (13.8)
Total	85 (100.0)	125 (100.0)	210 (100.0)

Chi-Sq = 65.39 p<0.001

Table 5: History of hospital admissions before ART by history of admission during the 12 months on ART

	History of admissions during 12 months ART		
	Yes	No	Total
History of admissions before ART	N (%)	n (%)	n (%)
Yes	37 (77.1)	74 (45.7)	111 (52.9)
No	11 (22.9)	88 (54.3)	99 (47.1)
Total	48 (100.0)	162 (100.0)	210 (100.0)

The table shows there were 111 (60%) admissions before ART. After commencement of ART, the number was to 48 (23%)

Chi-Sq = 45.2 p<0.001

Table 6: TB reason for admission before ART by TB reason for admission 12 months during ART

	TB reason for admission during 12 months ART		
	Yes	No	Total
TB reason for admission before ART	N (%)	n (%)	n (%)
Yes	5 (71.4)	12 (40.0)	17 (45.9)
No	2 (28.6)	18 (60.0)	20 (54.1)
Total	7 (100.0)	30 (100.0)	37 (100.0)

There were 17 (50%) (Cases of PLWHA admitted due to TB. After commencement of ART, the number of admissions due to TB dropped to 7 (19%).

Chi-Sq = 5.79 p<0.025

Table 7: Diarrhoea reason for admission before ART by Diarrhoea reason for admission 12 months during ART

	Diarrhoea reason for admission during 12 months ART		
	Yes	No	Total
Diarrhoea reason for admission before ART	N (%)	n (%)	n (%)
Yes	7 (50)	4 (17.4)	11 (29.7)
No	7 (50)	19 (82.6)	26 (70.3)
Total	14 (100.0)	23 (100.0)	37 (100.0)

The table shows that there were 11 (50%) cases PLWHA admitted due to diarrhoea before starting ART. After commencement of ART, the number increased to 14 (38%) cases showing an increase of 3 (8%) cases as compared to before ART.

Chi-Sq = 0.36 p>0.05

Table 8: RTI reason for admission before ART by RTI reason for admission 12 months during ART

	RTI reason for admission during 12 months ART		
	Yes	No	Total
RTI reason for admission before ART	N (%)	n (%)	n (%)
Yes	1 (100.0)	1 (2.8)	2 (5.4)
No	0 (0)	35 (97.2)	35 (94.6)
Total	1 (100.0)	36 (100.0)	37 (100.0)

The table shows that there were 2 (5%) case of PLWHA admitted due to RTI. After commencement of ART, there was only 1 case admitted due to RTI.

Chi-Sq = 0 p>0.05

Table 9: Malaria reason for admission before ART by Malaria reason for admission 12 months during ART

	Malaria reason for admission during 12 months ART		
	Yes	No	Total
Malaria reason for admission before ART	N (%)	n (%)	n (%)
Yes	1 (50.0)	2 (5.7)	3 (8.1)
No	1 (50.0)	33 (94.3)	34 (91.9)
Total	2 (100.0)	35 (100.0)	37 (100.0)

The table shows that there were 3 (8%) cases admitted before ART. After commencement of ART, there were only 2 (5%) cases of admission.

Chi-Sq = 0 p>0.05

Table 10: Other diseases reason for admission before ART by Other diseases reason for admission 12 months during ART

	Other diseases reason for admission during 12 months ART		
	Yes	No	Total
Other diseases reason for admission before ART	N (%)	n (%)	n (%)
Yes	3 (50.0)	4 (12.9)	7 (18.9)
No	3 (50.0)	27 (87.1)	30 (81.1)
Total	6 (100.0)	31 (100.0)	37 (100.0)

The information on the table is not significant to the study as it does not show specific diseases falling under other diseases

Chi-Sq = 0 p>0.05

Table 11: Patient had history of TB before ART by patient had history of TB 12 months during ART

	History of TB during 12 months ART		
	Yes	No	Total
History of TB before ART	N (%)	N (%)	n (%)
Yes	1 (5.9)	42 (21.8)	43 (20.5)
No	16 (94.1)	151 (78.2)	167 (79.5)
Total	17 (100.0)	193 (100.0)	210 (100.0)

Before ART, table shows that there were 43 (20%) cases of TB before ART. The history of TB cases dropped to 17 (8%) after commencement of ART.

Chi-Sq = 10.77 p<0.001

Table 12: Had history of diarrhoea before ART by had history of diarrhoea 12 months during ART

	History of diarrhoea during 12 months ART		
	Yes	No	Total
History of diarrhoea before ART	N (%)	n (%)	n (%)
Yes	9 (25.0)	26 (14.9)	36 (16.7)
No	27 (75.0)	148 (85.1)	175 (83.3)
Total	36 (100.0)	174 (100.0)	210 (100.0)

Before ART, the history of diarrhoea cases was 36 (17%). After commencement of ART, the number of diarrhoea cases remained the same.

Chi-Sq = 0 p>0.05

Table 13: History of Anaemia before ART by history of Anaemia 12 months during ART

	. History of anaemia during 12 months ART		
	Yes	No	Total
History of anaemia before ART	N (%)	n (%)	n (%)
Yes	0 (0)	11 (5.3)	11 (5.2)
No	2 (100.0)	197 (94.7)	199 (94.8)
Total	2 (100.0)	208 (100.0)	210 (100.0)

History of Anaemia cases before ART was 11 (5%). After commencement of ART, the number reduced to 2 (1%).

Chi-Sq = 4.92 p<0.05

Table 14: History of Pneumonia before ART by history of pneumonia 12 months during ART

	History of Pneumonia during 12 months ART		
	Yes	No	Total
History of pneumonia before ART	N (%)	n (%)	n (%)
Yes	0 (0)	10 (4.8)	10 (4.8)
No	2 (100.0)	198 (95.2)	200 (95.2)
Total	2 (100.0)	208 (100.0)	210 (100.0)

History of Pneumonia before ART were 10 (5%). After commencement of ART, the number significantly dropped to 2 (1%).

Chi-Sq = 4.08 p<0.05

Table 15: History of malaria before ART by history of malaria 12 months during ART

	History of malaria during 12 months ART		
	Yes	No	Total
History of malaria before ART	N (%)	n (%)	n (%)
Yes	0 (0)	11 (5.3)	11 (5.2)
No	2 (100.0)	197 (94.7)	199 (94.8)
Total	2 (100.0)	208 (100.0)	210 (100.0)

The table shows that the history of malaria before ART were 11 (5%) cases. After commencement of ART, cases dropped to 2 (1%).

Chi-Sq = 4.9 p<0.05

Table 16: History of oral thrush before ART by history of oral thrush 12 months during ART

	History of Oral thrush during 12 months ART		
	Yes	No	Total
Had history of Oral thrush before ART	N (%)	n (%)	n (%)
Yes	0 (0)	11 (5.3)	11 (5.2)
No	2 (100.0)	197 (94.7)	199 (94.8)
Total	2 (100.0)	208 (100.0)	210 (100.0)

The table shows that the history of oral thrush before ART were 11(5%). After commencement, they dropped to 2 (1%).

Chi-Sq = 4.92 p<0.05

Table 17: History of other diseases before ART by history of other diseases 12 months during ART

	History of other diseases during 12 months ART		
	Yes	No	Total
History of other diseases before ART	N (%)	n (%)	n (%)
Yes	6 (25.0)	31 (16.7)	37 (17.6)
No	18 (75.0)	155 (83.3)	173 (82.4)
Total	24 (100.0)	186 (100.0)	210 (100.0)

The history of other diseases before ART were 37 (18%). After commencement of ART, they dropped to 24 (11%).

Chi-Sq = 2.9 p>0.05

Table 18: Physician’s description of health status before ART by physician’s description of health status after 12 months on ART

	Physician’s description of health status after 12 months ART		
	Better	Bad	Total
Physician’s description of health status before ART	N (%)	n (%)	n (%)
Bad	38 (19.5)	8 (53.3)	46 (78.1)
Better	157 (80.5)	7 (46.7)	164 (21.9)
Total	195 (100.0)	15 (100.0)	210 (100.0)

Before ART, cases described as bad were 46 (22%) and after commencement of ART, cases were 15 (7%). The number of cases described as better was from 164 (78%) to 195 (93%).

Chi-Sq = 132.75 p<0.001

Table 19: Complaints of pain before ART by complaints of pain after 12 months on ART

	Complaints of pain after 12 months ART		
	Yes	No	Total
Complaints of pain before ART	N (%)	n (%)	n (%)
Yes	83 (86.5)	64 (56.1)	147 (70.0)
No	13 (13.5)	50 (43.9)	63 (30.0)
Total	96 (100.0)	114 (100.0)	210 (100.0)

There were 147 (70%) complaints of pain for ART and after commencement of ART, the number reduced to 96 (46%).

Chi-Sq = 32.47 p<0.001

Table 20: Lower limbs pain before ART by lower limbs pain after 12 months on ART

	Lower limbs pain after 12 months ART		
	Yes	No	Total
Lower limbs pain before ART	N (%)	N (%)	n (%)
Yes	5 (45.4)	12 (22.2)	17 (26.1)
No	6 (54.6)	42 (77.8)	48 (73.9)
Total	11 (100.0)	54 (100.0)	65 (100.0)

There were 17 (26%) cases of lower limbs location of pain before ART and after commencement of ART, the cases dropped to 11 (17%).

Chi-Sq = 1.39 (non significant)

Table 21: Upper limbs location of pain before ART by upper limbs pain after 12 months on ART

	Upper limbs pain after 12 months ART		
	Yes	No	Total
Upper limbs pain before ART	N (%)	N (%)	n (%)
Yes	5 (18.5)	6 (15.8)	11 (16.9)
No	22 (81.5)	32 (84.2)	54 (83.1)
Total	27 (100.0)	38 (100.0)	65 (100.0)

Before ART, there were 11 (17%) cases in the upper limbs location and after commencement of ART, the number increased to 27 (42%). However, the number of people without pain 38 (58%) was still more than the number of people with pain in the upper limb 27 (42%).

Chi-Sq = 8.03 p<0.01

Table 22: Abdomen pain before ART by Abdomen pain after 12 months on ART

	Abdomen location of pain after 12 months ART		
	Yes	No	Total
Abdomen pain before ART	N (%)	N (%)	n (%)
Yes	0 (0)	23 (37.1)	23 (35.4)
No	3 (100.0)	39 (62.9)	42 (64.6)
Total	3 (100.0)	62 (100.0)	65 (100.0)

The table shows that there were 23 (35%) cases of abdomen pain before ART and after commencement of ART, the number reduced drastically to 3 (5%) cases.

Chi-Sq = 13.88 p<0.001

Table 23: **Back pain before ART by back pain after 12 months on ART**

	Back pain after 12 months ART		
	Yes	No	Total
Back pain before ART	N (%)	N (%)	n (%)
Yes	0 (0)	5 (11.1)	5 (7.7)
No	19 (100.0)	41 (88.9)	60 (92.3)
Total	19 (100.0)	45 (100.0)	65 (100.0)

Before ART, there were 5 (8%) cases of back ache and after commencement of ART, the number increased to 19 (29%). However, the number of people without pain 45 (69%) was still more than the number of people with backache 19 (29%) after commencement of ART.

Chi-Sq = 7.04 p<0.015

Table 24: Headache before ART by head after 12 months ART

	Headache after 12 months ART		
	Yes	No	Total
Headache before ART	N (%)	N (%)	n (%)
Yes	8 (40.0)	18 (40.0)	26 (40.0)
No	12 (60.0)	27 (60.0)	39 (60.0)
Total	20 (100.0)	45 (100.0)	65 (100.0)

Before ART, there were 26 (40%) people with headache after commencement of ART, there were 20 (31%) people with headache.

Chi-Sq = 0.83 (Not significant)

Table 25: Sleep disturbances before ART by sleep disturbances after 12 months on ART

	Sleep disturbances after 12 months		
	ART		
	No sleep problems	Sleep problems	Total
Sleep disturbances before ART	N (%)	N (%)	n (%)
Sleep problems	40 (30.1)	59 (76.6)	99 (52.9)
No sleep problems	93 (69.9)	18 (23.4)	111 (47.1)
Total	133 (100.0)	77 (100.0)	210 (100.0)

Sleep disturbances were 99 (47%) before starting ART. After commencement of ART, the number of cases with sleep problems increased to133 (63%).

Chi-Sq = 7.16 p<0.01

Table 26: Able to go for work before ART by able to go for work during 12 months on ART

	Able to go for work during 12 months ART		
	Yes	No	Total
Able to go for work before ART	N (%)	N (%)	n (%)
No	26 (78.8)	19 (45.2)	45 (60.0)
Yes	7 (21.2)	23 (54.3)	30 (40.0)
Total	33 (100.0)	42 (100.0)	75 (100.0)

There were 30 (40%) PLWHA able to go for work before ART. After commencement ART, the number increased to 33 (44%).

Chi-Sq = 0.08 p>0.05

Table 27: Able to go for school before ART by able to go for school during 12 months on ART

	Able to go for school during 12 months ART		
	Yes	No	Total
Able to go to school before ART	N (%)	N (%)	n (%)
No	7 (87.5)	6 (50.0)	13 (65.0)
Yes	1 (12.5)	6 (50.0)	7 (35.0)
Total	8 (100.0)	12 (100.0)	20 (100.0)

There were 7 (35%) PLWHA able to go for school before ART. After commencement ART, the number increased to 13 (65%).

Chi-Sq = 2.28 p>0.05

Table 28: Body temperature before ART by body temperature after 12 months on ART

	Body Temperature after 12 months		
	ART		
	Normal	Abnormal	Total
Body Temperature before ART	N (%)	N (%)	n (%)
Abnormal	34 (17.8)	13 (68.4)	47 (22.4)
Normal	157 (82.2)	6 (31.6)	163 (77.6)
Total	191 (100.0)	19 (100.0)	210 (100.0)

Before ART, abnormal body temperature cases were 47 (22%), and after commencement of ART, the number of abnormal cases reduced to 19 (9%). Number of normal cases increased from 163 (78%) before ART and after commencement of ART, they increased to 191 (91%).

Chi-Sq = 120.28 p<0.001

Table 29: General condition before ART by General condition after 12 months on ART

	General condition after 12 months ART		
	No Ambulation problems	Ambulation problems	Total
General condition before ART	N (%)	N (%)	n (%)
No walking problems	65 (46.4)	18 (25.7)	83 (39.5)
Walking problems	75 (53.6)	52 (74.3)	126 (60.5)
Total	140 (100.0)	70.0 (100.0)	210 (100.0)

Before ART, number of people with ambulation problems were 126 (60%) and after commencement of ART, the number of cases with walking problems reduced to 70 (33%). The number of people with no ambulation problems increased from 126 (60%) to 140 (67%) after commencement of ART.

Chi-Sq = 33.72 p<0.001

Table 30: Weakness complaints before ART by weakness complaints after 12 months on ART

	Weakness complaints after 12 months ART		
	Not weak	Weak	Total
Weakness complaints before ART	N (%)	N (%)	n (%)
Not weak	38 (35.2)	13 (12.7)	51 (24.3)
Weak	70 (64.8)	89 (87.3)	159 (75.7)
Total	108 (100.0)	102 (100.0)	210 (100.0)

Before ART, there were 159 (76%) cases of weakness and 51 (24%) cases of not weak. After commencement of ART, the number of cases weak reduced to 102 (49%) and the number of cases not weak increased to 108 (51%).

Chi-Sq = 37.78 p>0.001

Table 31: Mental appearance before ART by mental appearance problems after 12 months on ART

	Mental appearance after 12 months ART		
	Normal	Depressed, worried, scared and confused	Total
Mental appearance before ART	N (%)	N (%)	n (%)
Depressed, worried, scared and confused	87 (89.9)	109 (96.5)	195 (93.3)
Normal	10 (10.3)	4 (3.5)	14 (6.7)
Total	97 (100.0)	113 (100.0)	210 (100.0)

Before ART, the number of cases described as depressed, worried, scared and confused was 195 (93%) and number of cases described as normal was 14 (7%). After ART, the number of cases described as depressed, worried, scared and confused reduced to 113 (54%) and the number of cases described as normal increased to 97 (46%).

Chi-Sq = 80.7 p<0.001

Table 32: Orientation on exam before ART by orientation on exam after 12 months on ART

	Orientation to exam after 12 months		
	ART		
	Disoriented	Oriented	Total
Orientation to exam before ART	N (%)	N (%)	n (%)
Disoriented	27 (51.9)	21 (13.3)	48 (22.9)
Oriented	25 (48.1)	137 (86.7)	162 (77.1)
Total	52 (100.0)	158 (100.0)	210 (100.0)

Before ART, the number of PLWA disoriented to exam was 48 and oriented were 162 (77%). After commencement of ART, the number of disoriented people increased to 52 (25%) and the number of oriented reduced to 158 (75%).

Chi-Sq = 0.16 p>0.05

Table 33: Side effects experienced by PLWHA during ART

	n	(%)
Had side effects		
Yes	128	(61.0)
No	82	(39.0)
Total	210	(100.0)
Side effect		
Diarrhoea		
Yes	15	(11.7)
No	113	(88.3)
Total	128	(100.0)
Abdomen		
Yes	25	(19.5)
No	103	(80.5)
Total	128	(100.0)
Jaundice		
Yes	5	(3.9)
No	123	(96.1)
Total	128	(100.0)
Asthma		
Yes	2	(1.6)

No	126	(98.4)
Total	128	(100.0)
Nausea		
Yes	30	(23.4)
No	98	(76.6)
Total	128	(100.0)
Peripheral Neuropathy		
Yes	54	(42.2)
No	74	(57.8)
Total	128	(100.0)
Rash		
Yes	33	(25.8)
No	94	(57.8)
Total	128	(100.0)
Others		
Yes	40	(31.3)
No	88	(68.8)
Total	128	(100.0)

The Table above shows that the number of PLWHA on ART experienced side effects during ART was 61% (128) and 39% (82) did not experience any side effects. The most common side effect was peripheral neuropathy 26%(54) Others recorded include; rash

16%(33), nausea 14%(30), abdominal pains 12%(25), diarrhoea 7%(15) and jaundice 2%(5).

Table 35: Weight of PLWHA on ART

WEIGHT	Frequency	Percent	Cum.
-14.0	2	1.0%	1.0%
-12.0	1	0.5%	1.4%
-11.0	1	0.5%	1.9%
-10.0	3	1.4%	3.3%
-9.0	2	1.0%	4.3%
-8.0	2	1.0%	5.2%
-7.0	1	0.5%	5.7%
-5.0	6	2.9%	8.6%
-4.0	2	1.0%	9.5%
-3.0	3	1.4%	11.0%
-2.0	2	1.0%	11.9%
-1.0	6	2.9%	14.8%
0.0	11	5.2%	20.0%
1.0	12	5.7%	25.7%
2.0	17	8.1%	33.8%
3.0	21	10.0%	43.8%
4.0	18	8.6%	52.4%
5.0	14	6.7%	59.0%
6.0	12	5.7%	64.8%
7.0	14	6.7%	71.4%
8.0	14	6.7%	78.1%
9.0	8	3.8%	81.9%
10.0	5	2.4%	84.3%

11.0	5	2.4%	86.7%
12.0	5	2.4%	89.0%
13.0	3	1.4%	90.5%
14.0	2	1.0%	91.4%
15.0	3	1.4%	92.9%
16.0	1	0.5%	93.3%
17.0	3	1.4%	94.8%
19.0	2	1.0%	95.7%
20.0	3	1.4%	97.1%
21.0	2	1.0%	98.1%
22.0	1	0.5%	98.6%
23.0	1	0.5%	99.0%
28.0	1	0.5%	99.5%
34.0	1	0.5%	100.0%
Total 	210	100.0%	

Total	Sum	Mean	Variance	Std Dev	Std Err
210	1017	4.843	49.961	7.068	0.488
Minimum	25%ile	Median	75%ile	Maximum	Mode
-14.000	1.000	4.000	8.000	34.000	3.000

Student's "t", testing whether mean differs from zero.

T statistic = 9.929, df= 209 p-value = 0.00000

The table shows that the mean difference of weights of PLWA was 4.843. The Null hypothesis for student's test was HAART will have no effect on weight of PLWA if mean difference is equal to ZERO (0). The table also shows significant standard deviation variance and P value < 0.00000 . Since the mean difference is greater than zero HAART had significant positive effect on PLWA's weight.

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This chapter discussed the main findings of the study. The study assessed the differences in the quality of life of people living with HIV/AIDS before starting antiretroviral therapy and while on Antiretroviral therapy. It also established the quality of life of PLWA before starting ART and during ART. The discussion of the findings had been presented under two subheadings namely; Quality of life before starting Antiretroviral therapy treatment and quality of life during 12 months on Antiretroviral therapy. The quality of life was discussed under seven domains derived from the Medical Outcomes Scale (MOS- HIV) namely Disease, physical and role function, energy/fatigue, mental health, pain, sleep and treatment domains. Cross tabulation of variables was done to ascertain the significance of P value and chi-square as shown on the above cross tabulation tables.

5.2 DISCUSSION OF VARIABLES

5.2.1 QUALITY OF LIFE OF PLWHIV/AIDS BEFORE AND DURING ANTIRETROVIRAL THERAPY

Quality of life was defined as impact of disease and treatment on the individual's general well being. Therefore, assessment of health related quality of life represented an attempt to show how variables within the domains and dimensions of health (e.g., a disease or its treatment) related to particular dimensions of life that had been determined to be important to people in general.

The quality of life of PLWA before and after commencement of anti-retroviral therapy was assessed using 7 domains as follows:

(i) DISEASE DOMAIN:

- **General condition**

PLWHA's general condition was assessed before and after commencement of Art. The findings showed that 84% (176) of the respondents, were ill looking before starting ART, (see table 2, page confirming that HIV/AIDS had substantially increased the demand for health services and negatively affected the quality of life) (Gill et al 2002). After commencement of ART the percentage of PLWHA who were ill looking dropped from 84% (176) to 63% (132) while the percentage of those who were not ill looking rose from 16% (34) to 37% (78). This clearly showed that ART had an effect on improving the quality of life of the respondents, ($p < 0.001$ and, $\chi^2 = 61.9$) / (See table 2, page 29). Before ART

the majority of the respondents were living with general condition described as ill looking was 59.5% (125) and during ART, the number of ill looking, PLWA dropped to 12.8% (27). These results indicated a percentage decrease of 46.7%.

- **CD4 cells**

The CD4 cell count was assessed before and after commencement of ART. It was found that 77% (161) of the study sample had CD4 cell count below 200 cell/mm³ before commencing of ART. This indicated a high prevalence of low CD4 cells signifying low immunity. This result was similar to a study by Gill et al (2002) that examined a relationship of HIV viral loads, CD4 counts and haemoglobin. The study results showed that after commencement of HAART, the percentage of the PLWHA with CD4 cell count above 200 rose to 60% (127) and the percentage below 200 was 40% (83), $P < 0.001$, $\chi^2 = 62.76$ (Table 3, page 30). Before ART, the number of PLWA with CD4 Cell count below 200 mm³ was 40 % (87) and during ART, the number increased by 4% (9). These results indicated a positive reduction of 36% indicated significant positive results.

- **Haemoglobin**

The Haemoglobin level was assessed before and after commencement of ART. It was found that 86.1% (181) of the study sample had abnormal haemoglobin levels and only 14%(29) PLWA had normal haemoglobin levels before commencing of ART. Table 4, page 40 indicates a high prevalence of abnormal haemoglobin signifying anaemia and low immunity. However after commencement of HAART

the percentage of PLWA with abnormal haemoglobin dropped to 60%(125) and the percentage of PLWHA normal haemoglobin rose to 41%(85) $p<0.001$, Chi-Sq= 65.39 .This result was similar to a study by Gill et al 2002 study that examined a relationship between HIV viral loads, CD4 counts and haemoglobin. The study results showed that after commencement of HAART the percentage of the subjects with normal haemoglobin rose to 41%(85) and the percentage those with abnormal HB reduced from 86% (181) to 60% before ART indicating a significant improvement. $P<0.001$, chi-Sq=65.39 (Table 4 page 30)

- **Anaemia**

History of anaemia was also assessed before and during HAART. The study results showed that before HAART 5 %(11) of PLWA had history of anaemia and after commencement of ART the percentage dropped to 0.9 %(2) $p<0.05$, Chi-Sq=4.92. This result was very significant denoting great improvement.

- **Number of hospital admissions.**

The results revealed that 53% (111) of the respondents were hospitalised before ART. This was due to the resurgence of diseases such as malnutrition, TB, diarrhoea and other opportunistic infections. AIDS related illnesses are contributing to over 50% of bed occupancy in most hospitals in East and Southern Africa. In a study conducted in Tanzania by Haacker (2001) it was discovered that HIV prevalence among hospital patients was almost 33% prevalence among hospital patients was almost 33% but after commencement of ART it was found

that the number of times patients were admitted dropped to 48 and those without a history of hospital admissions during ART had increased from 99 to 77% (162), χ^2 $p < 0.001$. This showed that ART improves the quality of life of PLWA as it could be seen by the drop in the history of number of hospital admissions after commencing of ART.

- **Reasons for admissions**

Reasons for hospital admissions of PLWA before commencing ART were also established and these included such conditions as TB, Diarrhea, RTI, Malaria and other reasons. (See table 5, page 31).

- **Tuberculosis**

The study had revealed that 46% of the respondents were admitted to hospital before ART. After commencing ART there was a reduction in the number of TB from 46%(17) to only 19%(7) $p < 0.025$, $\chi^2 = 5.79$ indicating that ART improved the quality of life of PLWA. Before commencement of ART, admissions due to TB were 5.7% (12). During ART, TB reason was 0.9% (2) indicating significant reduction of 4.8%. These results were very significant indicating a positive association of HAART with number of admissions.

- **Diarrhoea reason for admission**

Before commencement of ART 30 % (11) of PLWA gave diarrhoea as the reason ART reason for admission. During ART the percentage rose to 38 %(14).

$p>0.05$, $\text{Chi-Sq}=0.05$. These results were very insignificant and denoted poor quality of life associated with low immunity and side effects experienced by PLWA on HAART. The study results as reported under treatment domain showed that out of 128 PLWA who experienced side effects 7% (15) had diarrhoea and 12% (25) had abdominal pain (See table 7 Page 31). Before commencement of ART, 1.9%, During ART, 3.3% indicated negative results, marking an increase of diarrhoea cases by 1.4% ($p<\text{value}$ very insignificant). Before ART, diarrhoeal cases were 12.3% and during ART they increased to 12.8% reflecting negatively.

- **Malaria reason for admission**

Before commencement of ART malaria was at 0.08% (3) and during ART dropped to 0.054% 2, $p>0.05$, $\text{Chi-Sq}=0$. The results showed that Malaria incidence was not associated with HAART. Before ART, Malaria reason for admission was 0.9%. During ART it slightly reduced to 0.4% indicating 0.5 reductions. Despite having reduced by 0.5% the PLWA was still not significant.

- **Respiratory Tract Infections**

Before commencement of ART 0.05% (2) of PLWHA were admitted due to respiratory tract infections and during ART dropped to 0.02%(1) $p>0.05$, $\text{Chi-Sq}=0$. These results were similar findings of a study by Seyler (2003). According to Seyler the incidence of hospital admissions due to opportunistic infections higher among the group not on ART apart from malaria. The risk of infection increased with reduction in CD4 cells. Patients with CD4 counts < 200 cells/mm³

had a great risk of life threatening opportunistic infections. After commencing ART there was a reduction in the number of hospital admissions as regard the OIs such as TB from 17 to only 7($P<0.025$) also indicating that ART improves the quality of life of PLWA.

- **Opportunistic Infections (OIs)**

The history of OIs and other diseases was assessed before and during HAART. History of OIs looked at included such OIs as TB, Pneumonia, oral thrush, diarrhoea, malaria and others.

TB history-There were 21 % (43) cases of TB before ART. This presented as the most common OI in PLWA before commencing ART. After 12 months of ART, only 8 % (17) cases of history of TB were recorded ($p<0.001$, Chi-Sq=10.77) (See table 11, Page 33).

- **Pneumonia history**

Before ART 5% (10) of PLWA had history of Pneumonia and during ART only 0.09% (2) had history of pneumonia. $P<.05$, Chi-Sq=4.08. Before ART, history of pneumonia cases was 4.7% (10) and during ART Pneumonia history reduced to 0.9% (2). Indicating positive results as of 3.8% very significant.

- **Oral thrush history**

The study results showed that before ART 5.2%(11) of PLWA had oral thrush and during ART only 0.9%(2) $p<0.05$, Chi-Sq=4.92. (See table 16 on page 35).

These results on history of opportunistic infections before and during HAART clearly shows that the quality of life significantly improved apart from history of diarrhoea which showed no significant reduction probably due to side effects as alluded above ($p>0.05$, Chi-Sq=0. Other diseases looked at also showed the same trend with marked reduction in the number of cases after HAART commencement. (Table)

- **Health status**

Physicians described health status of PLWA as poor or better. It was found that 22% (46) of PLWA were described as having poor health status before ART and the number dropped to 7% (15) after commencement of ART. (See table 18, page 36). Those described as having better health status before ART were 78% (164) and the number rose to 93% (195) after commencement of ART Chi-square value ($p<0.001$). As shown above, the quality of life significantly improved after starting ART as described by the physicians as being better or bad.

- **Body temperature**

The PLWA under study's temperature was taken before and after commencement of ART. The study results showed that 22% (47) PLWA had abnormal temperature and 78% (163) had normal temperature before ART. At 12 months ART, the number of subjects with abnormal temperature dropped to 9 % (19) and the number of those with normal temperature significantly rose to 91% (191). $P<0.001$, chi-square =120.28 which is very significant (See table 28, page 41).

Before ART, body temperature before 6.2%. After ART, 2.8%. Total reduction of abnormal body temperature of 3.4%

- **Weight**

It was also looked at individual weights of PLWHA when recorded as baseline data before commencement of ART and at 12 months during ART. Student test was used to measure the weight significance. Two weight readings were taken on each PLWHA before and at 12 months after commencement of HAART. The mean difference was 4.843 and hence greater than 0 indicating that HAART had a positive effect on quality of life of PLWHA. The standard deviation was 7.068, Standard error 0.488, Variance 49.961, Medium 4.0001 with a very significant P value (See table 35, Page 46).

(ii) TREATMENT DOMAIN

Under this domain the following aspects were examined:

- **Side effects**

The study results showed that the number of PLWA on ART who experienced side effects during ART was 61% (128) and 39% (82) did not experience any side effects. The most common side effect was peripheral neuropathy 26% (54), others recorded include; rash 16% (33), nausea 14% (30), abdominal pain 12% (25), diarrhoea 7% (15) and jaundice 2% (5) (See table 34, page 45). These results confirm findings by Park (2002) who stated that toxicities from anti-retroviral

therapy (ART) are common and may necessitate changes in medication. The majority of these toxicities are not life threatening but can affect quality of life and negatively impact patient's willingness to adhere to their regimens. According to Park, gastro-intestinal disturbance such as nausea, vomiting cited toxicity leading to a change in an initial anti-retroviral regime.

(iii) PAIN DOMAIN

The results showed that 70% (147) of the study sample complained of pain before ART and only 30 % (63) did not complain. This figure was very high implying that the quality of life in these people was poor. During ART at 12 months over half of the study sample 54% (113) had no pain ($p < 0.001$, Chi-Sq= 32.47). Only 46% (96) of the sample complained of pain as compared to 70% (147) before ART. Though the location of the pain was not very relevant to the study it also contributed to show how poor the quality of life was in these subjects. The results showed that majority 18% (26) of PLWA experienced headache, 16% (23) complained of abdominal pain $p < 0.001$, Chi-Sq=13.88. 12% (17) complained of the lower limb pain 7% (11) complained of pain in the upper limb ($p < 0.01$, Chi-Sq=8.03) and only 3% (5) complained of back pain ($p < 0.015$, Chi-Sq=7.04). This is contrary to Michael (2001). In his study to determine the impact of HAART on PLWA in relation to psychological benefits, he found that HAART was effective at improving physical well being of PLWA though had little effects on the quality of life as pain severity was barely or not improved by treatment. Before ART

30.4% (64) complained of pain and during ART only 6.2% (13). The results were very significant marked by a reduction of 24.4%. Pain cases had reduced drastically indicating significant improvement.

(iv) SLEEP DOMAIN

Another parameter measured in this study was sleep disturbances. It was found that 47.1% (99) had problems with sleep before ART. During ART at 12 months the number of people with sleep problems reduced to 36.7% (77) and the number of subjects without sleep problems rose to 63.3% (133), (p value <0.001, chi-square = 7.6) showing significant improvement in the quality of life as compared to only 53%(111) indicating poor quality of life before starting ART (See table 25, page 40). Before ART, 19% (40) and after ART, 8.5% (18) marking an improved reduction of 10.4%

(v) PHYSICAL AND ROLE FUNCTION DOMAIN-

Role function assessed the ability of the PLWA to go for work. The study results showed that of the 75 people who were in employment, those that were not able to go for work before ART were 60% (45) which is more than 50%, and only 40% (30) were able to go for work (See table 26, page 40). This showed significantly how the quality of life was negatively affected by the pandemic. At 12 months ART the number of PLWA able that was able to go for work was 44% (33). These results showed slight improvement in the quality of life by 4%, (chi= 0.08, p<0.05) as

compared to before ART. Also showed that those who were able to go for work before starting ART continued going for work at 12 months as there was no significant reduction. Before ART, 2.5% (6) and after ART 2.5% (6). Hence no marked percentage improvement reduction. However, the number going to school increased by 0.5% that is from 7 PLWA to 8 who are able to go school.

- Role function also assessed ability of the PLWA to go to school. The study results showed that out of the total 20 students recorded in the study 65% (13) were not able to go to school and after commencement of ART the number dropped to 60%(12). The number of students able to go to school rose from 35%(7) before ART to 40%(8) after commencement of ART, (chi-square=2.28, $P>0.05$) These results also showed that those who were able to go school continued going to school during the 12 ART as there was no significant reduction in the number of PLWHA going to school at 12 months ART (See table 27, page 27).

vi) **ENERGY DOMAIN** – The researcher assessed whether the PLWHA had mobility or not. The study results showed that 60 %(127) had walking problems and 40% (83) had no walking problems. After commencement of ART the number of subjects with walking problems dropped to 33 %(70) and the number with no walking problems increased to 67 %(140), $P<0.001$, chi-Sq=33.72 (Refer to table 29 page 42)

Energy domain – was one of the parameters looked in terms of feeling weak and not weak. The study results showed that the number of subjects who complained of weakness before ART was 76% (159) and those who were not weak were 24% (51). After commencement of ART the number of subjects with weakness dropped to 48% (102) and the number not weak increased to 51%(108), $P<0.001$, $\chi^2=37.78$ (See table 30 page 42). The above results showed a marked improvement of quality of life in terms of energy by more than 50%.

vii) **MENTAL HEALTH DOMAIN-**

Mental appearance was looked at as being normal and abnormal (depressed, worried, scared and confused) and also whether oriented or disoriented.

- Normal and abnormal-

Before ART 195 (93%) PLWHA were found to be depressed, worried, scared and confused and only 7% (14) were described as normal. The figure of 93%(195), which constituted the numbers of PLWA described as abnormal, is so high that it showed how HIV/AIDS negatively affect the quality of life of these individuals. After commencement of ART the number of PLWA recorded as abnormal dropped to 54% (113) and the number of normal subjects increased to 46%(97), $P<0.001$, $\chi^2=80.7$. The above results showed a marked improvement of quality of life. Before ART, 56% and after ART abnormal indicating positive percentage reduction of 52.6% very significant results.

• Orientation And Disorientation

The study results showed that before ART 23% (48) were disoriented and 77(162) were oriented. After commencement of ART the number of disoriented PLWA surprisingly increased by 3% to 25%(52) and oriented reduced by 2% to 75%(158), $P>0.05$, $\chi^2=0.16$ (See table 32 page 44) These results showed slightly poor quality in regard to orientation marked by a reduction of 2%. This could be related to the side effect which was commonly neuropathy.

Successful highly active antiretroviral therapy (HAART) regimens have resulted in substantial improvements in the systemic health of HIV infected persons and increased survival times.

5.3 THE IMPLICATIONS FOR THE NURSING PROFESSION

5.3.1 NURSING PRACTICE

The study results provided a detailed factual information and data for evidence based nursing care. It is evident from the study results that HAART improved the quality of life of PLWA. However sustainability and continued positive treatment outcomes demand total commitment by nurses and all concerned stake holders in the provision of emotional, psychological, physical and social support. It was

important that since most PLWA are treated as outpatient, information, education and communication should be strengthened to promote adherence. Emphasis should have been stressed on the importance of compliance. It should have been made very clear that though side effects of HAART may cause discomfort and affect quality of life; they are not life threatening, hence the need to continue taking drugs as prescribed. However, as care givers, palliative treatment such as analgesics and vitamins should be available according to identified side effects. For instance, a PLWA experiencing neuropathy already on vitamin B6 dose can be increased to 100 mgs per day.

5.3.2. NURSING RESEARCH

Recent research and clinical evidence indicate that poor adherence to antiretroviral drug therapy is a major problem which has the potential to diminish effectiveness and promote viral resistance. Therefore, there is more likelihood of PLWA experiencing side effects to miss doses in trying to avoid discomfort and adverse effects and hence result in poor adherence. Nurses and other allied professionals needed to develop problem identification and observational skills to capture side effects such as rash, neuropathy, jaundice and nausea, and undertake prompt problem tailored interventions.

5.3.3. NURSING EDUCATION

The era of HAART possessed great a challenge to Nursing Education with diverse implications. Consequently, it is important in order to cope with increased demand care and service arising from HIV scourge and introduction of HAART. Mentors and students should have been adequately equipped with knowledge on HAART and its implications so as to function to expected standards. Therefore, it was imperative that Nursing Education Curriculum, teachers and student learning and Teaching Guides should have been reviewed and issues pertaining to management of PLWHA on HAART be incorporated. Psychosocial counselling should be incorporated as a more detailed minor course as opposed to the current nursing curriculum where it appears just as a mere topic under psychology. There was need to review the nursing curriculum with other practicing health professionals that were involved in the nursing education as regards management of PLWA on HAART such as doctors, clinical officers, nurses and other paramedics. In case of already qualified health practioners, workshops and seminars on management of PLWA on HAART should have continue to be enhanced to enable them cope up with arising challenges in the care of PLWA when faced with actual situational problems and dilemmas associated with HAART. Since research on HIV/AIDS and its management is still on going, it was important for nursing practice and education to be updated from time to time as potential and new facts arise. Information resource centres should have been established. These are modern libraries with latest books, journals and newsletters equipped with unlimited Internet access. This can be achieved by institutions procuring and having more computers connected to the Internet as well as

networking with other libraries in other schools. They should also have information banks where data can be stored by various cooperating institutions that embark on various kinds of research related to PLWHA on HAART.

5.3.4. NURSING ADMINISTRATION

Nursing administrators played a key role in creating an environment conducive for psych-socio counselling and evidence based nursing practice. It was imperative that nursing administrators in this regard were equipped in this regard are equipped with psycho-social counselling knowledge and skill regarding management of HAART. The study results showed that the majority 61% (128) of PLWHA experienced side effects during ART. Since research has proved that side effects negatively affect adherence and compliance, it is important that nurse managers take cognisance of this and encourage nurses to urge patients to take their medications as most of these side effects are not life threatening. Nurse managers were to supervise the nurses in ART clinics to ensure that they give IEC to patients on compliance to ART.

4. CONCLUSION

The purpose of this study was to determine the quality PLWHA before and during ART. Before commencement of HAART, it was evident that the quality of life was literally poor evidenced by conditions, such as TB 20% weakness, 76%

(159), inability to walk 61 (126), high number of hospital admissions, and 77% (161) PLWHA had a CD4 cell count below 200.

The study results confirmed that HAART improved the quality of life is PLWHA in a resource poor setting in the city of Livingstone. Significant improvement in almost all the seven domains “Disease (TB $p<0.0025$), Pain ($p<0.001$), Energy ($p<0.001$), Physical and Role Function and Sleep domain.

Disease Domain

The Physician’s description of health status of PLWHA after 12 months on ART showed that 93% (195) were described as better $p< 0.001$. The hospital admissions dropped from 60% (111) to 23% (43) $p<0.001$. Before HAART 47.1% (99) had sleep disturbances. After HAART PLWHA $p<0.001$ and Mental Health domain – Before commencement of HAART 93% (195) were described as abnormal and only 6.7% (14) was normal. However, after commencement of HAART the number of PLWHA described as normal was 46.1% (97) as compared to only 6.7% (14) before HAART $p< 0.001$. the mental domain component of orientation showed on improvement as it was marked by increase in the number of PLWHA disoriented 25% (52) as compared to 22.9% (48) before HAART ($p>0.05$). This was probably due to the recorded side effects such as neuropathy, nausea, rash, and abdominal pain as already reported above Energy domain - the number of PLWHA not weak after HAART was 51.4% $p<0.001$.

The overall scores for each domain other than orientation in the mental health domain denoted higher scores of improved quality of life illustrated by a p-value of less than 0.001 and chi-square above 0.5, hence, the Null hypothesis was accepted, as the quality of life was better after commencement of ART.

5.5 RECOMMENDATIONS

The following recommendations had been made based on the findings of this study:

1. Government and private institutions providing HAART facilities should have enhance management of side effects. In cases of neuropathy, the dose for Vitamin B6 should be doubled in subjects taking Vitamin B6 but experiencing neuropathy.
2. Information, Education and Communication on HAART should have be enhanced to promote adherence as cases of non-compliance had been reported in relation to side effects. It was important to emphasize that those side effects affect quality of life, but they were not life threatening.
3. Management of opportunistic infections and pain were also other perimeters, which needed to be managed effectively with available therapies and analgesics by all concerned stake holders (Government and private institutions)

4. CD4 cell count should have been checked every 6 months and laboratory personnel to be trained so that accurate results are given.
5. Clinical management should have point out classification of patient symptoms regarding their severity. The study results showed that patient pain was recorded just as pain and was never classified as mild, moderate or severe.
6. Nursing curriculum was to be reviewed so as to integrate psychosocial counselling as a minor course. In the current curriculum psychosocial counselling appears just as a topic under psychology.
7. Since very few research studies had been conducted to determine the quality of life of PLWHA on HAART, it should have been recommended that further studies be done in to explore on the treatment outcomes.

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INFORMED CONSENT

**TITLE: STUDY TO DETERMINE THE QUALITY OF LIFE OF PATIENTS
ON BEFORE AND DURING ART**

Consent could not be obtained from the participants because their files and records were used. The research ethics committee of University of Zambia had approved this study. I also got permission from Livingstone Hospital Management to undertake this important study in their Hospital.

PURPOSE OF THE STUDY

This study would assist in getting more information on the Anti-retroviral therapy effects on prolonging life, decreasing morbidity and returning patients to work and school in resource poor setting like Zambia. It will address issues of accessibility, compliance and adherence, and ascertain the degree of adverse effects and toxicities. The impact on production would be assessed using rate of absenteeism, sick off and hospital admission as some of the indicators. The study would further reveal the knowledge of HIV/AIDS clients – whether they understood the medication they were taking or not.

The information would assist government and concerned stakeholders to improve ART management and provide medical and social support to clients on ART. The

information would be useful in finding measures of reducing morbidity and mortality among the most productive age (15 to 49 years age).

PROCEDURE

After approval from the university of Zambia and Livingstone General Hospital, I would go through the files and records and obtain the necessary data needed for my study.

BENEFITS

By carrying out the study I would be able to provide the relevant information that would help relevant authorities and policy makers to come up with strategies to improve the quality of care and support for persons with HIV/AIDS conditions.

CONFIDENTIALITY

The research records will be confidential to the extent permitted by law. They would be identified by code and personal information would not be released without written permissions, except when required by law. The MOH, CBOH, Livingstone General Hospital Boards, the University of Zambia Research Ethics Committee or School of Medicine may review the records, but again this would be done confidentially.

PLEASE NOTE:

Person to contact for problems or issues is :

Likando Likando UNZA PBN

Phone: 097530689, 095780327

Box 50110, Lusaka.

A. QUESTIONNAIRE

Guided Structured Questionnaire for obtaining data from respondents 's medical files at base line and 12th Follow-up Visits.

On how the quality of life has changed for patients/clients on anti-retroviral after receiving trimune therapy used as a guide to obtain information from the medical files

Date----- Serial number -----

Place-----

Instructions to Research Assistant

- Read through the questionnaire carefully and ensure that you obtain data for each stated item .Ensure that the client is aged between 15 and 49 years of age Triomune ART.
- Use the questionnaire as a guide to record information on separate sheets of papers provided.

SECTION A – Demographic Data

A) Socio-Demographic Data

1)Sex:

(a) Male

1

(b) Female

2

2) Age:

(a) 15-25

1

(b) 26-35

2

(c) 36-49

3

3) Residential Address:

(a) Low cost

1

(b) Medium cost

2

(c) High Cost

3

(d) Village

4

4) Level of Education:

(a) No formal education

1

(b) Primary

2

3

(c) Secondary

(d) College

(e) University

4

5

6

5) Occupation:

(a) Student

(b) Informal employed

(c) Formal employed

(d) Not employed

1

2

3

4

6) Marital Status

(a) Single

(b) Married

(c) Widow

(d) Separated

(e) Widower

(f) Divorced

1

2

3

4

5

6

7) Religion

(a) Catholic

(b) Protestant

(c) Muslim

1

2

3

(d) Other

8) Number of children

(a) 1--10

1

(b) 6--10

2

(c) 11—15

3

(d) Above 15

4

SECTION B – Before starting Triomune

I. DISEASE DOMAIN

11) General condition of the client before starting Triomune ART?

(a) Unconscious

1

(b) conscious but not ambulant

2

(c) conscious and ill looking

3

(d) conscious and not ill looking

4

12) What investigations were done before starting Triomune ARV treatment?

(a) Full Blood Count

1

(b) CD4 Cell Count

2

3

(c) X-Ray

4

(d) Others specify.....

(e)

13) What was the amount of CD4 cell count at starting Triomune ART?

(a) Below 50-less than 200/ul

1

(b) 200-499/ul

2

(c) More than 500/ul

3

15) What was the amount of haemoglobin at the start of Triomune ART?

(a) Below less than 200/ul

1

(b) 200-499/ul

2

(c) More than 500/ul

3

39) Any history of admission before Triomune ART?

(a) Yes

1

(b) No

2

39) If yes, state the reasons for admission.

(a) Tuberculosis

1

(b) Diarrhoea

2

(c) Other specify.....

18) If yes, how many times?

(a) Once

1

(b) Twice

2

(c) Other, specify.....

19) History of any other illness before starting Triomune ART?

(a) Tuberculosis 1

(b) Diarrhoea 2

(c) Any other

19) Physician’s description of client’s current health status?

(a) Worse 1

(b) Stable 2

(c) Better

II. PAIN DOMAIN

23) Any complaints of pain on examination before starting Triomune ART?

(a) Yes 1

(b) No 2

24) What was the site/location of pain ?

(a) Head 1

(b) Lower limbs 2

- (c) Upper limbs 3
- (d) Abdomen 4
- (e) Back 5
- (f) Chest 6

25) What was the description of the pain?

- (a) Mild 1
- Sleeping too much 2

III. SLEEP DOMAIN

26) Any problems with sleep?

- (a) Sleeping too much 1
- (b) Having insomnia 2
- c) Not at all 3

II. .PHYSICAL FUNCTION AND ROLE FUNCTION DOMAIN

27) If in employment , was the client able to go for work before starting Triomune ART?

- (a) Yes 1
- (b) No 2

28) If going to school, was the client able to go to school before Triomune ART?

(a) Yes

(b) No

29) What was the weight of the client at the start of Triomune ART ?-----

30) What was the temperature before Triomune ART?

(a) Below 36 degrees celsius

(b) 36 to 37

(c) 37.2 to 38

(d) 38.1 to 40

(e) Above 40

IV ENERGY /FATIGUE DOMAINS

31) General condition of client in terms of energy before starting Triomune ART?

(a) Unable to walk

(b) Walking with difficult

(c) Walking with easy

32) Any complaints of weakness before starting Triomune ART?

(a) Very weak

(b) Slightly weak

(c) Weak

(d) Not at all

V. MENTAL HEALTH DOMAIN

33) What was the mental appearance on examination before starting Triomune ART ?

(a) Depressed

(b) Worried

(c) Scared

(d) Confused

Others specify -----

34) What was the orientation of the client on examination before starting Triomune ART ?

a) Disoriented – time ,person and space

b) oriented – time, person and space

SECTION C – At 12 months during Trimune therapy

I . DISEASE DOMAIN

35) What was the general condition of the client at 12th month visit ?

- a) Unconscious

1
- b) Conscious but not ambulant

2
- c) Conscious and ill looking

3
- d) conscios and not ill looking

4

36) What was the amount of CD4 cells at 12th month visit?

- a) Below 50-less than 200/ul

1
- b) 200-499/ul

2
- c) More than 500/ul

3

37) What was amount of haemoglobin at 12th visit ?

- a) Below less than 200/ul

1
- b) 200-499/ul

2
- c) More than 500/ul

3

38) Any history of admission at 12th month visit?

- (c) Yes

1
- (d) No

2

39) If yes state reasons for admission >

(a) Tuberculosis 1

(b) Diarrhoea 2

(c) Other specify.....

40) If yes how many times ?

a) Once 1

b) Twice 2

c) Other specify.....

c) Physician 's description of client's current health status at 12th month visit?

(a) Worse 1

(b) Stable 2

(c) Better 3

22) History of any illness at 12th month visit ?

(a) Tuberculosis 1

(b) Diarrhoea 2

(c) Any other
specify.....

II. PAIN DOMAIN

23) Any complaints of pain on examination at 12th month visit ?

1

(c) Yes

(d) No

2

25) If yes, what was the description of pain at 12th month visit ?

(a) Mild

(b) Moderate

c) Severe

24) What was the site/location of pain ?

(a) Head

1

(b) Lower limbs

2

(c) Upper limbs

(d) Abdomen

(e) Back

(f) Chest

III. SLEEP DOMAIN

28) Any problems with sleep at 12th month visit ?

(c) Sleeping too much

1

(d) Having insomnia

2

3

c) Not at all

1
3

II. .PHYSICAL FUNCTION AND ROLE FUNCTION DOMAIN

9)) If in employment , was the client able to go for work at 12th month visit ?

(b) Yes

1

(b) No

2

11)If going to school , was the client able to go to school at 12th month visit ?

(c) Yes

1

2

(d) No

TREATMENT DOMAIN

38) Did the patient experience any side effects at 12th month visit ?

(a) Yes

1

(b) No

2

39) If yes state the effect or side effect experienced ?

(a) Diarrhoea

1

(b) Abdominal pains

2

(c) Jaundice

3

(d) Asthma

4

(e) Nausea/vomiting

5

(f) Peripheral neuropathy

6

(g) Rash

7

Any other specify -----

40) What was the weight of the client at 12th month visit -----

41) What was the temperature at 12th month visit ?-----

a) Below 36 degrees Celsius

1

b) 36 to 37

2

c) 37.2 to 38

3

(f) 38.1 to 40

4

(g) Above 40

42) How often has the client been coming for reviews?

(a) Regularly

1

(b) Occasionally

2

(c) Only when feeling sick

3

Other specify --

IV ENERGY /FATIGUE DOMAINS

43) What was the general condition of client in terms of energy at 12th month visit?

- a) Unable to walk

1
- b) Walking with difficult

2
- c) Walking with easy

3

44) Any complaints of weakness at 12th month visit?

- a) Very weak

1
- b) Slightly weak

2
- c) Weak

3
- d) Not at all

4

V. MENTAL HEALTH DOMAIN

45) What was the mental appearance on examination at 12th month visit ?

- a) Depressed

1
- b) Worried

2
- c) Scared

3
- d) Confused

4

Others specify -----

46) What was the orientation of the client on examination AT 12th month visit ?

a) Disoriented – time ,person and space

b) Oriented – time,person and space

VI. TREATMENT DOMAIN

47) Did the patient experience any side effects of Triomune ART at 12th month visit ?

(a) Yes

(b) No

48) If yes, state the effect or side effect experienced by the client at 12th month visit ?

a) Diarrhoea

b) Abdominal pains

c) Jaundice

D) Asthma

e) Nausea/vomiting

f) Peripheral neuropathy

g) Rash

Any other specify -----

Livingstone School of Nursing
P.O Box 60091
LIVINGSTONE

25th March 2006

The Executive Director
Livingstone General Hospital
P.O Box 60091
LIVINGSTONE

Dear Madam

**RE: PERMISSION TO CARRY OUT RESEARCH AT LIVINGSTONE
GENERAL HOSPITAL HAART CLINIC**

I am hereby applying for permission to carry out research in your institution at the Medical Clinic.

The title of the study is "Determine the quality of life before and during HAART." The study will involve review of 210 medical files of PLWHA aged between 15 and 45 years of age. The study will be undertaken from April 2006 to December 2006.

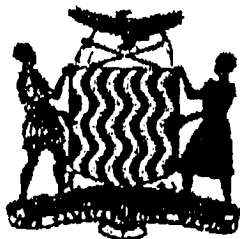
Your consideration will be very much appreciated.

Yours faithfully



LIKANDO LIKANDO
Post Graduate Student
Master of Science in Nursing

Correspondence should be addressed to:
Executive Director
321436
6



REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

March 2006

Dr. Frank Chikando Likando
University of Zambia
Department of Post Basic Nursing
P.O. Box 60091
LUSAKA

LIVINGSTONE GENERAL HOSPITAL
P.O. BOX 60091
LIVINGSTONE

In reply please quote:

No.

PERMISSION TO CARRY OUT A STUDY IN LIVINGSTONE GENERAL HOSPITAL AT LIVINGSTONE MEDICAL HAART CLINIC

We acknowledge receipt of your letter dated 25th March 2006 with thanks for requesting the study to determine the quality of life of PLWHA before and during

HAART. Permission is granted for you to carry out your planned research activities in our HAART Clinic. Management will be pleased to have a copy of your study results to enable us manage HAART effectively.

Yours faithfully,

Respectfully

FRANK CHIKANDO LIKANDO
EXECUTIVE DIRECTOR



THE UNIVERSITY OF ZAMBIA

RESEARCH ETHICS COMMITTEE

260-1-256067
UNZA, LUSAKA
ALU ZA 44370
1-250753
arec@zamtel.zm

Ridgeway Campus
P.O. Box 50110
Lusaka, Zambia

ce No. FWA00000338
1131 of IORG0000774

2006
-12-05

lo Likando, BA Nursing
nt of Post Basic Nursing
50110

likando,

**RESEARCH PROPOSAL ENTITLED: "A STUDY TO DETERMINE THE QUALITY OF
LIFE OF PEOPLE LIVING WITH HIV/AIDS BEFORE AND DURING ART"**

research proposal was presented to the Research Ethics Committee meeting held on 21 December, 2005
nges were recommended. We would like to acknowledge receipt of the corrected version with
ns. The proposal has now been approved. Congratulations!

IONS:

approval is based strictly on your submitted proposal. Should there be need for you to modify or change
dy design or methodology, you will need to seek clearance from the Research Ethics Committee.
have need for further clarification please consult this office. Please note that it is mandatory that you
copy of your final report at the end of the study.

erely,

Karashani, MB, ChB, PhD
AN

approval: 30 March, 2006

Date of expiry: 29 March, 2007