



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



Access to antiretroviral treatment in the Public Sector, in Zambia

By

Joseph Nikisi
(s24404048)


Submitted in partial fulfilment of the requirements for the Degree
Master of Public Health (MPH)
(Monitoring and Evaluation Track)

At the
School of Health Systems and Public Health
Faculty of Health Sciences
University of Pretoria
Republic of South Africa

June 2005
Supervisor: Dr. Andy Beke
SHSPH, Pretoria

DECLARATION

“I declare that the research report, which I hereby submit for the degree of Masters in Public Health at the University of Pretoria, is my own work and has not been previously submitted by me for other degrees or diplomas at another University.”

Signed: 

Date: 18 July 2005

ACKNOWLEDGEMENTS

I would like to thank USAID/ZAMBIA for funding my MPH program at the School of Health Systems and Public Health, University of Pretoria, Republic of South Africa. Secondly, I would like to thank Central Board of Health (CBOH) for granting me permission to conduct the study in Zambia.

My sincere appreciation goes to members of staff of the School of Health Systems and Public Health at the University of Pretoria for all administrative efforts pertaining to my studies. Special thanks go to Dr Andy Beke, who supervised and provided valuable input to this dissertation. I am also indebted to Dr Zeleke Worku, who provided statistical advice towards this study.

In addition I would like to sincerely thank Mr. Rick Hughes of JHPIEGO/Zambia and Dr. Velepi C. Mtonga of CBOH for the support and encouragement rendered to me during the whole period of my study.

Lastly but not the least I would like to thank my wife Florence and son Mphaso for the understanding and sacrifice they made during my absence from home.

DEDICATION

This report is dedicated to my late brother David who died from AIDS before the advent of antiretroviral treatment and to all those who are suffering from HIV/AIDS and have no access to antiretroviral therapy which is life prolonging in HIV/AIDS.

TABLE OF CONTENTS

DECLARATION	ii
Acknowledgements	iii
Dedication.....	iv
List of tables	vii
List of Figures.....	viii
List of abbreviations.....	ix
Abstract	0
CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW	1
1.0 Introduction.....	1
1.1 Literature Review	4
CHAPTER 2: OBJECTIVES OF THE STUDY AND STUDY SETTING.....	6
2.2 Study aim and specific objectives	6
2.3 Geographic, demographic, social and economic setting of Zambia.....	7
CHAPTER 3: METHODS AND DATA COLLECTION.....	12
3.1 Study design.....	12
3.2 Study population	12
3.3.1 Sampling	12
3.3.2 Sample size	12
Inclusion Criteria	13
Exclusion Criteria	13
3.6 Data analysis.	16

3.7	Ethical consideration	16
3.8	Limitations of the study.....	16
CHAPTER 4: RESULTS.....		17
4.1	Sex Distribution	17
4.2	Age distribution.....	17
4.3	Age group by sex distribution.....	18
4.4	Duration of treatment	19
4.5	Marital status distribution.....	20
4.6	Employment status distribution	21
4.7	Employment by sex distribution	22
4.10	Cost of the ART scheme.....	26
4.11	Education Level by sex distribution.....	27
4.13	Availability of a Health facility in the area of residence	29
4.14	Travel time to ART center from residential place	29
CHAPTER 5: DISCUSSION.....		31
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS		36
7.0	REFERENCES.....	39

List of tables

Table 1	Socio-economic and demographic profile of Zambia	9
Table 2	Number of patients on ART by province and sample size	13
Table 3	Distribution of patients according to age group	19
Table 4	Distribution of patients by income category	25
Table 5	Percent distribution by type of ART scheme sponsorship	27
Table 6	Distribution by residential area type	29
Table 7	Distribution of patients by access to health facility	30

List of Figures

Figure 1	Map of Zambia	8
Figure 2	Map of Zambia showing HIV prevalence by province, 2002	11
Figure 3	Sex distribution	18
Figure 4	Patients distribution by age group and sex	20
Figure 5	Distribution of patients by duration of treatment	21
Figure 6	Marital status by sex distribution	22
Figure 7	Employment status distribution	23
Figure 8	Percent distribution of employment status by sex	24
Figure 9	Distribution of patients by income category	26
Figure 10	Patients perception of the cost of ARVs	28
Figure 11	Patient distribution by level of education	29
Figure 12	Distribution of patients by travel time to ART centre	31

List of abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ARVs	Antiretroviral
CBOH	Central Board of Health
HIV	Human Immune Deficiency Virus
MOH	Ministry of Health
PMTCT	Prevention of Mother To Child Transmission
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation
ZDHS	Zambia Demographic Health Survey

Abstract

Aim

To determine the demographic and socio-economic characteristics of patients accessing antiretroviral treatment, in the public sector in Zambia.

Methods

A descriptive cross-sectional survey, using a pre-structured interview questionnaire, with patients on antiretroviral treatment. A total of 200 patients receiving antiretroviral treatment at the 2 national referral hospitals and seven provincial hospitals providing ART were included in the study

Data was analyzed using STATA version 8. Analysis was by frequency tables and summary statistics.

Results

The majority of the patients on antiretroviral treatment were females at 61.5 percent. Most of the patients were in the age group 40 – 44 years old. Most of the patients were married followed by those who were widowed, who were predominantly female. The net monthly income was generally low for most patients and the forty thousand Kwacha monthly contributions for ARVs was high for most patients. Higher levels of education were associated with increased access to antiretroviral treatment.

Conclusion and Recommendations

There were more females than males accessing antiretroviral treatment in the public sector in Zambia. The majority of patients have a low income and the forty thousand Kwacha monthly contributions towards ARVs was high for most patients.

It is recommended that antiretroviral treatment be provided for free or at a highly subsidized cost and also that the Ministry of Health increases the ART centers if the goal to put 100,000 on treatment by the end of 2005 is to be achieved.

Key words

Socio-economic, demographic factors, HIV, antiretroviral treatment

CHAPTER 1: INTRODUCTION AND LITERATURE REVIEW

1.0 Introduction

Zambia as a country has continued to experience an increase in illness and deaths due to HIV/AIDS with devastating effects on individuals, families and entire communities. This has adversely affected the labour force across all economic activities. The increasing number of patients has and is seriously overwhelming the health care services, with HIV/AIDS patients occupying more than half of the hospital beds¹.

The 2001-2002 Zambia Demographic Health Survey (ZDHS) showed that 16% of the population ages 15-49 years, around one in every six individuals in this age group in Zambia, is HIV positive. The infection rate is substantially higher among women (18%) than men (13%). The proportion found to be HIV positive rises from a level of 5% among the 15-19 years old age group, to 25% among those individuals' aged 30-34 years before falling to a level of 17% among the 45-49 years age group. The ZDHS results also indicate that there are distinct differences between women and men in the age pattern of HIV infections. The prevalence rates were higher in the urban areas than rural areas, the prevalence rate being 23% and 11% respectively².

Effective control of HIV/AIDS epidemic lies in intensifying prevention programmes, strengthening care and support, expanding treatment and instituting impact mitigation programs. Zambia has so far actively responded to the HIV/AIDS epidemic on nearly all of these fronts, however antiretroviral treatment progress has not been widely

implemented due to the high cost and great complexity of providing this life prolonging intervention³.

The advent of potent antiretroviral therapy (ART) and the declining costs of the drugs have lead to a revolution in the care of patients with HIV/AIDS³. Although these treatments are not a cure and present new challenges of their own with respect to side effects and drug resistance, they have dramatically reduced the morbidity and mortality rates, improved quality of life, revitalized communities and transformed perceptions of HIV/AIDS from a plague to a manageable chronic illness⁴.

In 2002, the Zambian Government took a policy decision to make ART widely available to HIV/AIDS infected people through the public sector health facilities. This decision was followed by the allocation of US\$ 3 million from Governments' own resources, to purchase antiretroviral drugs for 10,000 people, to be provided through the public sector. The program was to be implemented in phases, beginning with the two largest hospitals in the country, to be extended to provincial centres and subsequently to other sub-centers⁵.

Currently, antiretroviral treatment is being provided at a number of private clinics and hospitals and in the public sector at all nine provincial hospitals. ART is also provided at some faith-based health facilities and at least one Government health centre. The total number of patients currently on ART in the public sector in Zambia is estimated to be around 8000.

Implementing ART in Zambia is guided by some principles, primarily: **Equity of access**. The principle is that ART should be delivered equitably to all those who need it, including children, women, men and all vulnerable populations such as the very poor, prisoners and displaced persons⁶. Due to limitations of resources, a cost sharing mechanism has been put in place where the patients are required to contribute (US\$ 8) monthly, towards the drugs. This already does limit accessibility, as the poor would not be able to afford.

About 900,000 people are currently living with HIV/AIDS, and of these, about 200,000 need Antiretroviral treatment³. Zambia can afford to treat only 10,000 at the moment, although this figure is likely to reach 100,000 by the year 2005 through the 3 by 5 WHO global initiative⁷.

WHO and UNAIDS are leading an international effort to address the emergency which aims to have three million people in resource-limited countries on antiretroviral therapy (ART) by the end of 2005, the 3 by 5 strategy.

ARV treatments are not likely to be available in sufficient quantities for everyone who needs them, a situation that raises human rights, ethical and gender issues about who gets treatment. Issues of equity of access have been raised with the ARV program in Zambia. The problem relates to socio-economic and demographic issues such as distance to ARV centres, poverty, education and the status of women. As the program scales up

refinements can be made to the existing guidelines so that gaps in inequities are reduced and access for the socially and economically less privileged improved.

This study therefore, seeks to explore the demographic and socio-economic characteristics of patients accessing antiretroviral treatment in the public sector in Zambia.

1.1 Literature Review

In Uganda, another country that is implementing the ART program in the public sector, the ultimate goal of the ART policy, is to provide a framework that will allow universal access to ART to all in need who are clinically eligible. Hence, meeting clinical eligibility criteria is the first step to being eligible for treatment. The policy is consistent with the Government's gender policy, in which gender responsiveness is applied to all services. But more so in HIV related services such as ART. Women are more vulnerable to HIV transmission and socio-economic burden from AIDS. According to the AIDS surveillance reports of the Ugandan Ministry of Health 2002, HIV sero-prevalence is 45% among men and 55% among women. However in the short term, due to limited physical access to ART outlets and limited resources, the goal of universal access can only be approached but not attained⁸.

Socio-cultural norms that define male and female roles and responsibilities also affect women's and men's access to and use of health services including HIV/AIDS services.

Economic factors also affect women's access to and use of services. Economic constraints such as the lack of money to pay for the services or transportation or the high opportunity costs of lost time, create significant barriers for women's health services.

Women's economic vulnerability further constraints their time, women are concentrated in more insecure jobs with longer hours, poor pay and little benefits⁹.

Experience of providing free and universal access to antiretroviral therapy for treatment of HIV/AIDS in Brazil, show that even when services are free there are noticeable gender differences in the seeking and use of services. One of the challenges that remain in Brazil's treatment program is that, despite a large network of anonymous voluntary counselling and testing (VCT) units through out the country, women are not being diagnosed until late stages of the infection. Other studies done elsewhere have also shown that women are less likely than men to receive treatment for HIV related ailments^{10, 11}.

A study done in British Columbia, where antiretroviral therapy and AIDS care was provided free of charge, found female gender and residence in a neighbourhood with low income to be factors negatively associated with receiving treatment. Similar socio-economic factors were associated with receiving inconsistent treatment or seeking for health care. People with low income, low resources or marginal social groups usually have least access to health care^{12, 13, 14}. Studies in other African countries like Senegal, Cote D'Ivoire and Uganda have shown that the majority of HIV infected patients seeking care faced persisting socio-economic barriers for access to ARVs and prophylaxis for opportunistic infections¹⁵.

CHAPTER 2: OBJECTIVES OF THE STUDY AND STUDY SETTING

2.1 Research question

What are the demographic and socio-economic characteristics of patients accessing antiretroviral treatment in the public sector in Zambia?

2.2 Study aim and specific objectives

The aim of the study was to determine the demographic and socio-economic characteristics of patients accessing antiretroviral treatment, in the public sector in Zambia. The specific objectives were to:

- To determine the sex and age distribution of adult patients accessing antiretroviral treatment in the public sector in Zambia.
- To find out the income level patterns of adult patients accessing antiretroviral treatment in the public sector in Zambia
- To establish the education level patterns of adult patients accessing antiretroviral treatment in the public sector in Zambia.
- To determine the distribution of patients accessing antiretroviral treatment by area of residence and distance from the health facility
- To make recommendations for developing policies and guidelines that will address equity of access to antiretroviral drugs more effectively.

2.3 Geographic, demographic, social and economic setting of Zambia

Zambia is a landlocked country in Central Africa and covers an area of 752,612 square kilometres. It shares borders with eight countries namely Malawi, Congo Democratic Republic, Tanzania, Zimbabwe, Mozambique, Namibia and Angola. The country is divided into nine provinces and has 72 administrative districts. The nine provinces include; Lusaka, Copperbelt, Central, Northern, Northwestern, Luapula, Western, Eastern and southern provinces.

Below is the map of Zambia, showing provinces, major towns and neighbouring countries.

Figure 1: Map of Zambia



Source: ZDHS 2001-2002

The population of the country in the year 2000 was estimated at 10.3 million². The population has been growing steadily from 5.7 in 1980 to 7.8 in 1990 and 10.3 in the year 2000. The annual growth rate in the year 2000 was 2.9 percent. The population density has increased from 7.5 people per square kilometres in 1980 to 10.4 in 1990 and 13.7 in 2000².

With an estimated per capita income of about \$320 in 1999, Zambia is classified as one of the poorest countries in sub-Saharan Africa with over 70 percent of the population living in abject poverty. The country's economy depends mainly on mineral resources and exports, in particular copper, which generates over 50 percent of the foreign exchange earnings of the country. Over the last three decades, the structure of the economy and composition of output changed perceptibly: the share of agriculture in the economy increased from around 15 percent in the 1970s to about 21 percent in the 1990s; manufacturing from 16 percent to 21 percent; services from 35 percent to 40 percent; and energy from 2.4 percent to 2.8 percent. On the other hand, the share of mining declined from 24 percent to about 11 percent and that of construction from 7.3 percent to about 4.5 percent. As of 2000, nearly half of the Gross Domestic Product (GDP) came from services, about 27 percent from agriculture, and about 13 percent from manufacturing. Mining contributed only about 3 percent of GDP¹⁶.

The health status as reflected by some indicators has also been deteriorating over the years. The Maternal Mortality Ratio for Zambia is 729 per 100,000 and the Under-Five Mortality Rate and Infant Mortality Rate now stand at 168 and 95 per 1000, respectively².

Table 1. Socio-economic and demographic profile of Zambia

Variable	Figure
Mid year 2003 population	10.9 Million
Infant Mortality Rate	95 per 1000
Life expectancy at birth (Total)	41 years
Life expectancy at birth (Male)	41 years
Life expectancy at birth (Female)	40 years
Births	43 per 1000 population
Deaths	21 per 1000 population

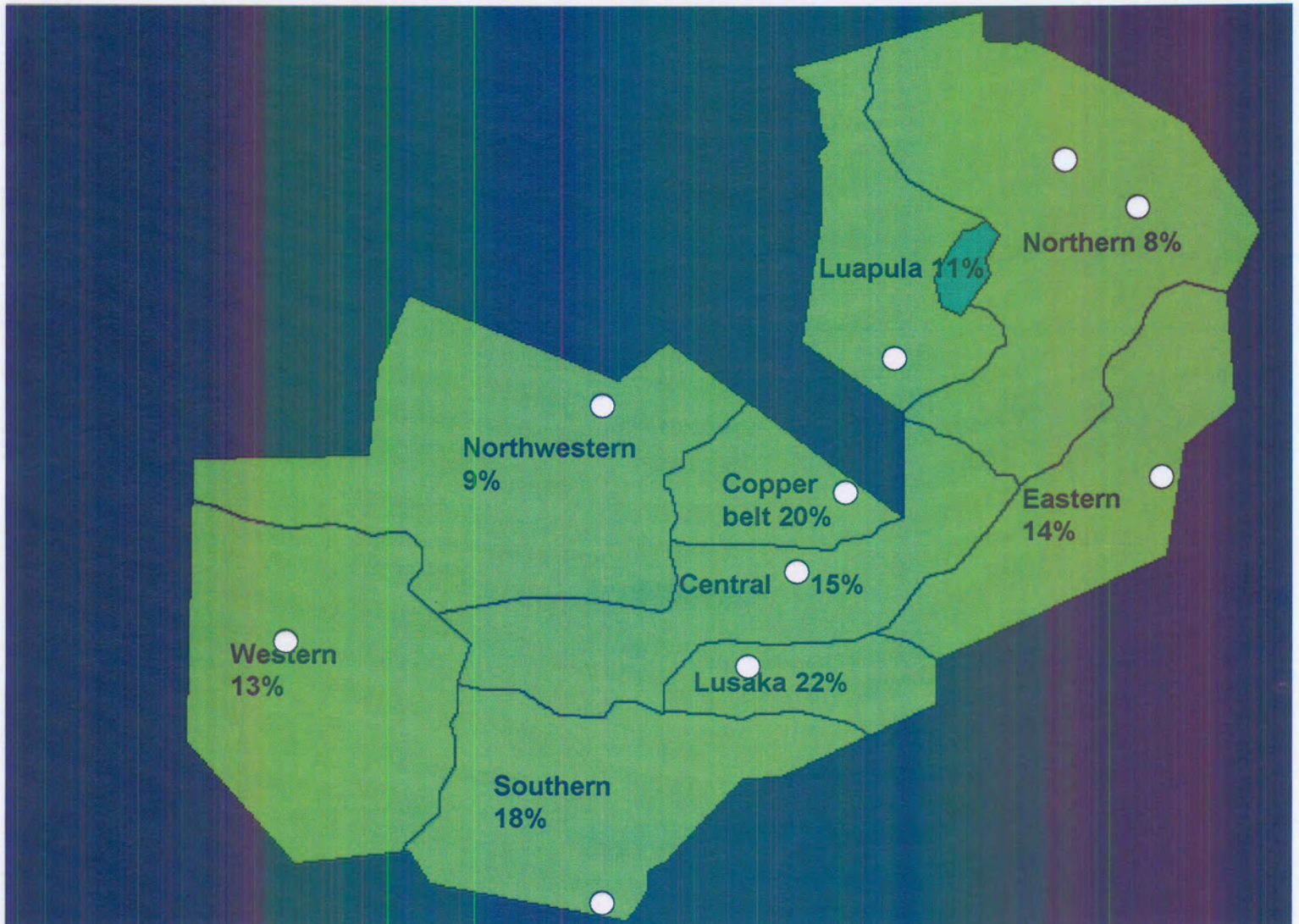
Source: PRB 2003

2.4 HIV Trends in Zambia

In 2002, the HIV prevalence rate for the entire country was nearly 16 % according to the Demographic and Health survey. Overall, the HIV prevalence remains high. This shows that Zambia is undergoing one of the worst HIV/AIDS epidemics in the world. While there may have been some change over time, the sentinel surveillance results suggest that prevalence was close to this level at the time of the earlier surveys.

The epidemic is certainly not a new phenomenon in Zambia. The evidence indicates that that HIV prevalence was already at high levels in the early 1990s. The HIV prevalence is almost twice as high in the urban areas as in the rural areas. Estimated HIV prevalence is highest in Lusaka and Copperbelt provinces. The map below shows the prevalence of HIV in Zambia in 2002 by province¹⁷.

Figure 2: Map of Zambia showing HIV prevalence, Ages 15 to 49, by province: 2002



CHAPTER 3: METHODS AND DATA COLLECTION

3.1 Study design

The study design was a Descriptive cross-sectional survey of patients on antiretroviral treatment.

3.2 Study population

The study population was adult HIV/AIDS patients' aged 15 years and above accessing antiretroviral treatment in the public sector.

3.3 Sampling and Sample size

3.3.1 Sampling

Proportionate Stratified sampling was used to select the sample of patients for the study from the nine provincial ART sites. Stratification was by provincial ART centre. The subjects were randomly selected by using the ART clinic appointment register as the sampling frame.

3.3.2 Sample size

The sample size was calculated using Epi-info STATCALC.

Population on ARVs: as of July 2004 (CBOH update) = 8,151

At 95% confidence interval

Expected frequency =50%

Worst acceptable result =42%

n = 147 patients

Assume 80% response rate: $147/0.8 = 183.75$

The sample size was increased to 200 to allow for an increase in the sample size in the centres contributing a small proportion to the number of patients on ART.

Table 2: Number of Patients on ART by Province and sample size

Province	No. of patients on ART	Percentage	Sample size proportionate to size
Central	252	3.1	6
Copperbelt	2662	32.7	65
Eastern	301	3.7	7
Luapula	115	1.4	3
Lusaka	4051	49.7	100
Northern	188	2.3	5
N Western	108	1.3	3
Southern	260	3.2	6
Western	214	2.6	5
Total	8151	100	200

Inclusion Criteria

- a) All Adult patients 15 years and above
- b) Receiving ARVs from Public institution
- c) Out patient

Exclusion Criteria

- a) Age less than 15 years
- b) Receiving ARVs from the Private Sector
- c) In patient

In patients were excluded from the study because access to the antiretroviral therapy programme is through the out patient ART clinics.

3.4 Questionnaire

The study was conducted at all the nine (9) major public hospitals providing antiretroviral treatment. Two (2) hospitals are the national referral hospitals (University Teaching Hospital (UTH), in Lusaka and Ndola Central Hospital on the Copperbelt) and the other 7 (seven) provincial hospitals. The 2-referral hospitals have been providing ART since late 2002 whereas the 7 provincial hospitals have been providing ART since mid 2003.

Data collection was through face-to-face interview with patients on ART using a structured interview schedule (questionnaire). The researcher with the assistance of trained nurse-counsellors conducted the interviews with patients receiving antiretroviral drugs using this standard questionnaire.

The patients were interviewed at the outpatient ART clinics.

The questionnaire included questions on the following demographic and socio-economic factors: sex, age, marital status and level of education completed, employment status and occupation, net monthly income and, type of area of residence and distance from health facility.

3.5 Definition of variables in the study

- a) **Respondent's current age** – the number of completed years i.e. age of an individual at last birthday;

- b) **Place of residence** of respondent - type of place of residence where the respondent was interviewed as either low density, medium density, high density, Farm or village;
- c) **Education level** of respondent - Highest education level attended. This is a standardized variable providing level of education in the following categories: No education, Primary, Junior Secondary, Senior Secondary or Higher;
- d) **Employment status** of respondent –whether employed or not employed;
- e) **Current marital status** - A contract made in due form of law, by which a free man and a free woman reciprocally engage to live with each other during their joint lives, in the union which ought to exist between husband and wife.
- f) **Travel time to ART centre** – the time taken to move from the patients’ home of residence to the ART centre;
- g) **Availability of Health facility** – easy access to a health facility within the area of residence
- h) **Income** – the net monthly income of the patient whether from employment, business or other means
- i) **ART scheme sponsor** – the one responsible for paying the mandatory forty thousand Kwacha monthly contribution towards the ARVs scheme
- j) **ART cost** – the perceived cost of ARVs by the patients categorised into, Very expensive, expensive, fair, cheap and very cheap;
- k) **Duration of treatment** –the period of time that the patient had been on ARVs at the time of data collection

3.6 Data analysis.

Data was entered using Epidata and STATA version 8 was used for the analysis of the data. Qualitative analysis of the Data was done using frequency tables for each discrete variable of study and summary statistics were also used for each continuous variable of study.

3.7 Ethical consideration

Written informed consent was obtained from the clients after explaining orally in local language or English if the client prefers.

Confidentiality was maintained at all times considering that the study involved the sensitive issue of HIV/AIDS. Anonymity was taken into account and no individual names of the patients are identified in any reports or publication.

The University of Pretoria Ethics Research Board and the University of Zambia Ethics and Research committee approved the study. The letters of approval are included in the appendix.

3.8 Limitations of the study

The problem of getting information and establishing strong association of access with the various factors, which is only giving a snap shot of the problem since this is a Descriptive cross-sectional study.

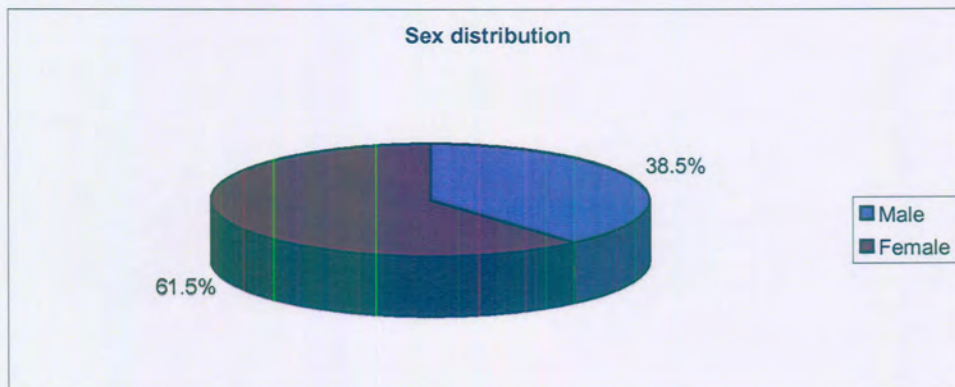
CHAPTER 4: RESULTS

This chapter gives the descriptive results of the study on access to antiretroviral therapy in the private sector, in Zambia.

4.1 Sex Distribution

There were a total of 200 patients who took part in this study. The sex distribution was 77 males and 123 females representing 38.5 % and 61.50 % respectively. This is shown in the pie chart below.

Figure 3: Sex distribution



4.2 Age distribution

The mean age of the patients was 38.4 years and the ages ranged from the youngest being 15 years old to the oldest 68 years old. The highest number of patients was in the age group 40 –44 (22%), followed by 35- 39 years age group (21%). The 35-44 years age group accounted for 43% of the patients. The table below shows the distribution of patients by age group.

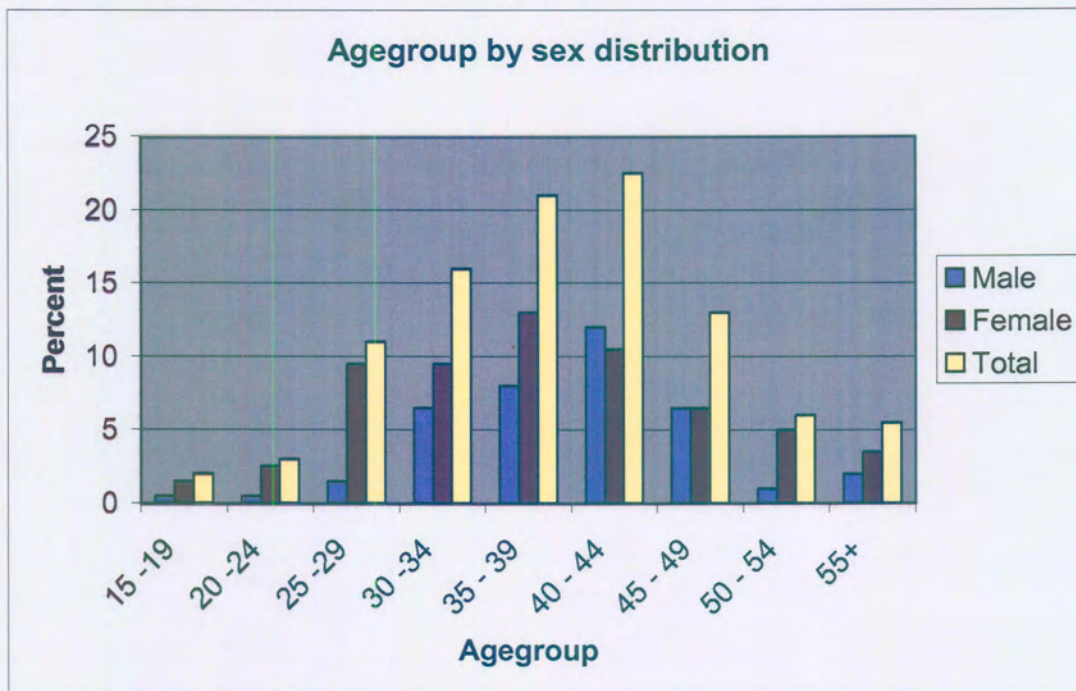
Table 3: Distribution of patients according to age group

Age group	Frequency	Percent
15 -19	4	2
20 -24	6	3
25 -29	22	11
30 -34	32	16
35 - 39	42	21
40 - 44	45	22.5
45 - 49	26	13
50 - 54	12	6
55+	11	5.5
Total	200	100

4.3 Age group by sex distribution

The percentage of females was higher in all the age groups with the exception of the 40-44 years age group where the percentage of males was higher and the 45-49 years age group where the percentage of females and males was the same. Amongst the 123 females, the highest percentage of patients was in the 35-39 years age group (21.14%) followed by the 40-44 years age group (17%). Amongst the 77 males, the highest percentage was in the 40-44 years age group (31.17%) followed by the 35-39 years age group (20.78%).

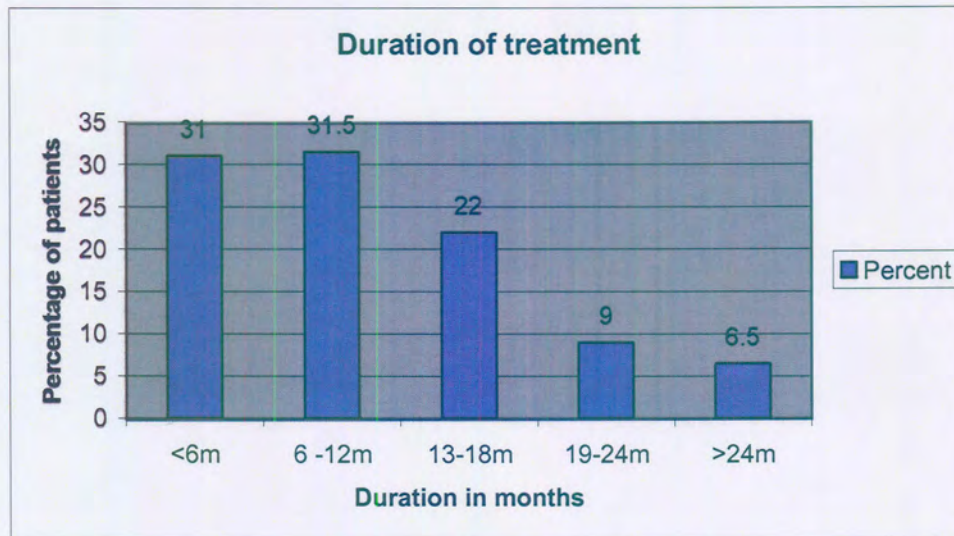
Figure 4: Patients distribution by age group and sex



4.4 Duration of treatment

The average duration of antiretroviral therapy was 11 months, with the duration ranging from 1 month to 47 months. About 31% of the patients had been on ARVs for less than 6 months and slightly over 31% between 6 months and 12 months and 22% between 13 and 18 months. Only 6.5% of the patients had been on treatment for than 24 months. The distribution of the duration of treatment is shown below.

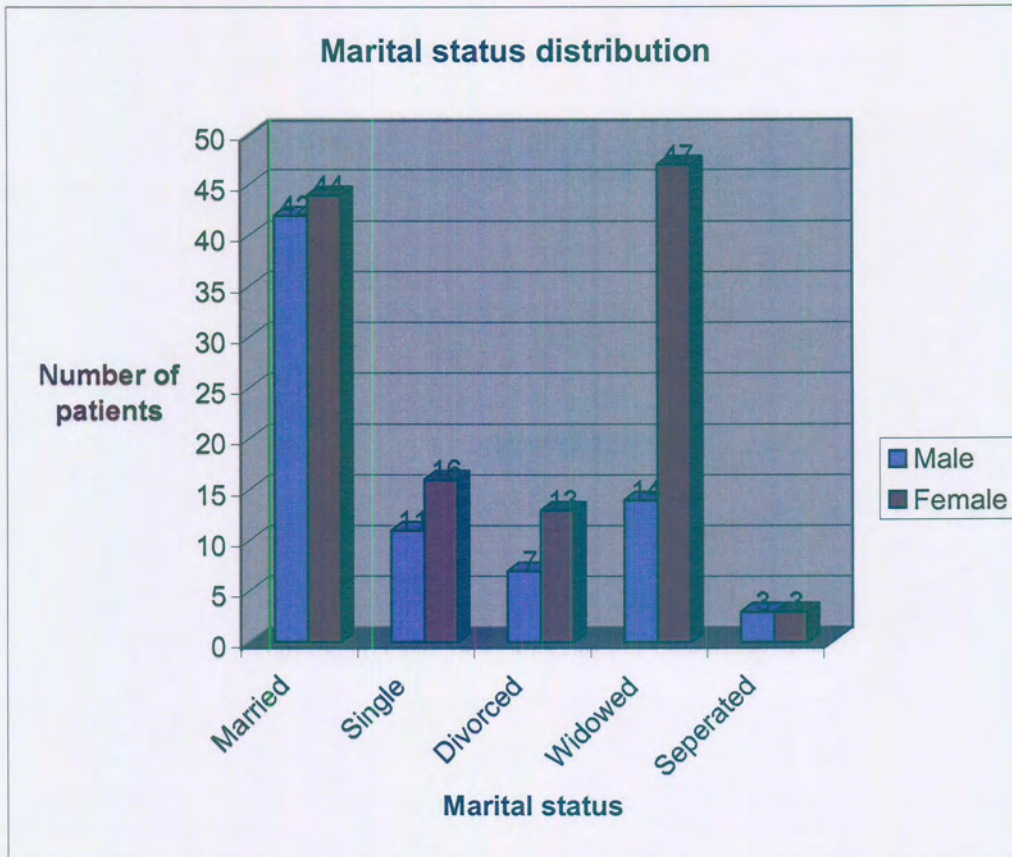
Figure 5: Distribution of patients by duration of treatment



4.5 Marital status distribution

The majority of the patients were married representing 43%. Within the group of married patients, 51.2% and 48.8% were females and males respectively. The second highest group was the widowed group with 30.5%. In the widowed group the majority were females representing 77% of the group. The majority of the males, 54.55% (42 out of 77) were married and 18% (14) were widowed compared to females where, the majority 38.2% (47 out of 123) were widowed and 35.77% (44 out of 123) of them were married. The marital status distribution is shown in the figure below.

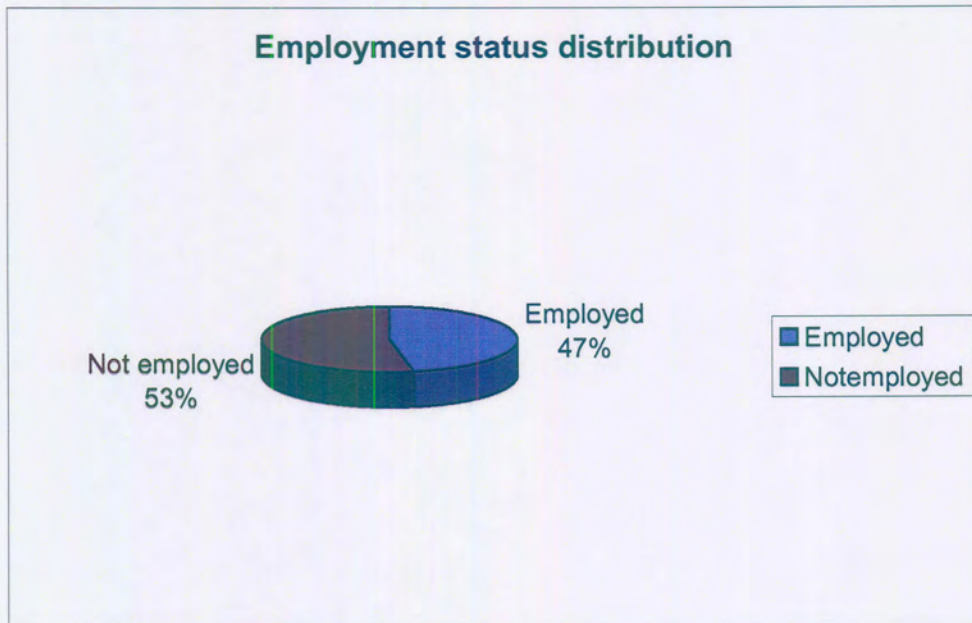
Figure 6: Marital status by sex distribution



4.6 Employment status distribution

Fifty three percent (53%) of the patients were not in employment while 47% were in employment. The majority of those not in employments were females representing 68.9% of the group. Employment distribution is shown in the pie chart below.

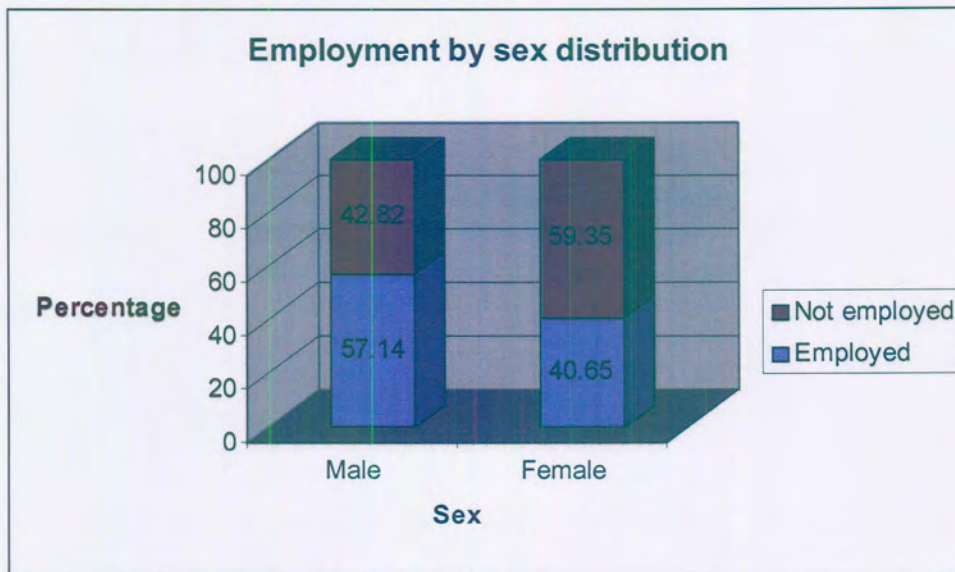
Figure 7: Employment status distribution



4.7 Employment by sex distribution

Amongst the males, 57% of them were in employment whereas amongst the females only 40.7% were in employment. This is shown in figure 7 below.

Figure 8: Percent distribution of employment by sex



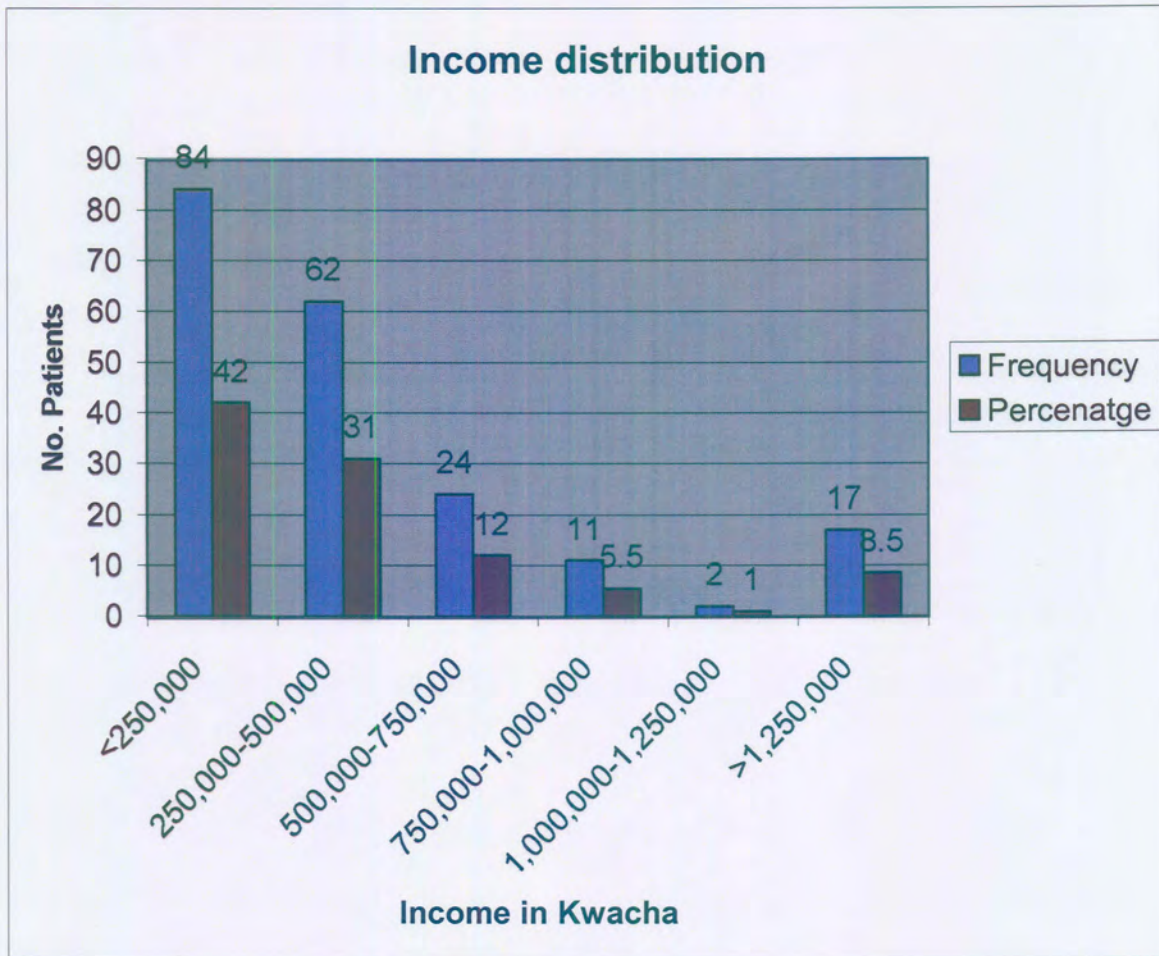
4.8 Net monthly Income level patterns (1USD = K4, 800)

The net income per month ranged from no income at all to the highest income being K10,000,000. The average income was K546,365 (USD 110) and the median was K350,000. The income level was not normally distributed, therefore the median is more meaningful here than the mean income. Most of the patients (42%), earned K250,000 (USD 52) or less per month. Another 31% had a monthly income of just above K250,000 to K500,000 and 12% earned between K500,000 and K750,000. Cumulatively this shows that 85% of the respondents earned K750,000 or less. The income distribution is shown below in table 3 and figure 8.

Table 4: Distribution of patients by income category

Income category (K)	Frequency	Percent (%)	Cumulative
=<250,000	84	42	42
>250,000- 500,000	62	31	73
>500,000 – 750,000	24	12	85
>750,000 – 1,000,000	11	5.5	90.5
>1,000,000 – 1,250,000	2	1	91.5
>1,250,000	17	8.5	100
Total	200	100	

Figure 9: Distribution of patients by income category



4.9 ART scheme sponsor distribution

With regard to ART scheme monthly contribution of K40,000), most of the patients, 98 (49%) were sponsoring themselves, while 25 (12.5%) were sponsored by their spouses. Fourteen percent of the patients were sponsored by other family members, which included, uncles, cousins and own children. There were only 17 patients (8.5%) sponsored by their employers and only 7% were exempted from the K40, 000.00 monthly payments for the ARVs, as shown below in table 4.

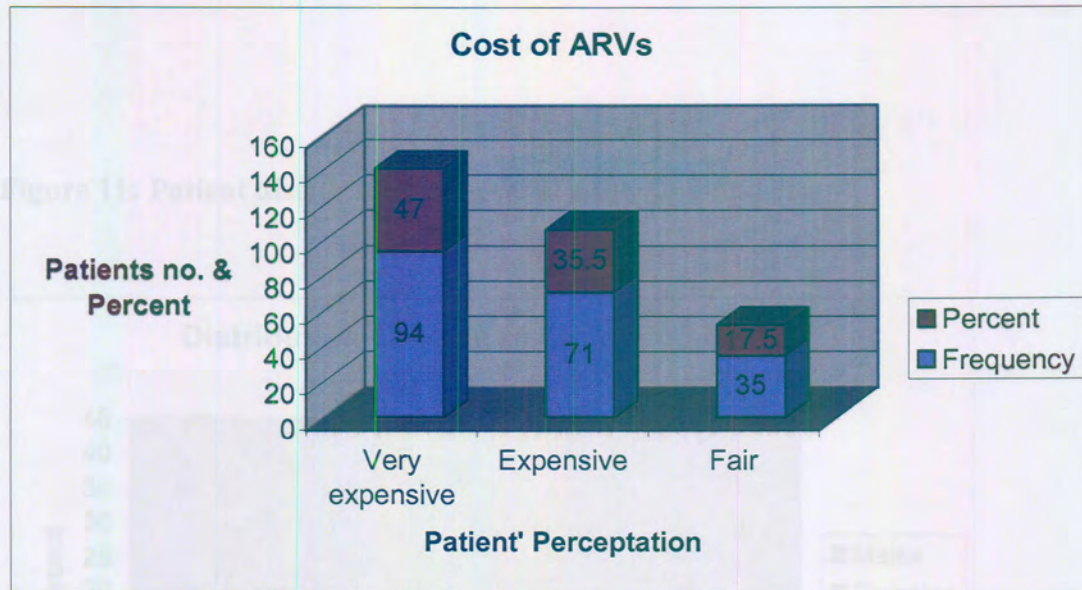
Table 5: Percent distribution by type of ART scheme sponsorship

ART Sponsor	Frequency	Percentage
Self	98	49
Spouse	25	12.5
Parents	9	4.5
Sibling	8	4
Other family	28	14
Friends	1	0.5
Employer	17	8.5
Exempted	14	7
Total	200	100

4.10 Cost of the ART scheme

The patients were asked about their perception about the cost of the ART scheme in terms of it been very expensive, expensive, fair, cheap or very cheap. The cost of K40,000.00 per month for the ART scheme was said to be very expensive by most patients (47%) and expensive by 35.5% while the remaining 17.5% said that the cost was fair. This is shown in figure 10 below.

Figure 10: Patients perception of the cost of ARVs



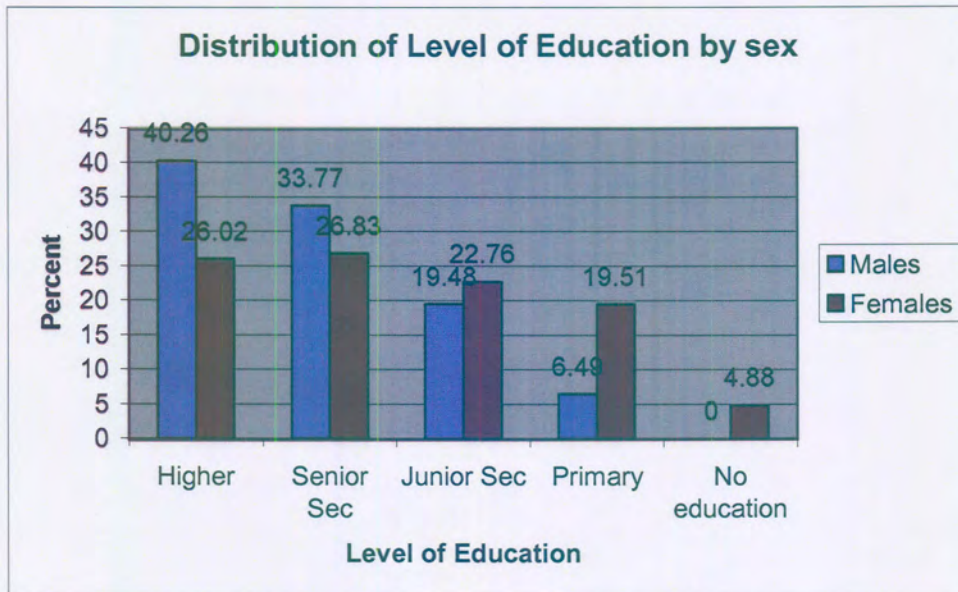
4.11 Education Level by sex distribution

Forty percent (40%) of the males had attained a higher level of education compared to 26% of the females. Almost 34% of the males had attained senior secondary school level of education compared to about 27% of the females. Ninety three percent (93%) of the males and 72% of the females had junior secondary education or above. This is illustrated in figure 11 below.

Table 6: Distribution by residential area type

Residential area type	Frequency	Percentage
Low Density	36	18
Medium Density	65	32.5
High Density	24	12
Other	15	7.5
Total	200	100

Figure 11: Patient distribution by level of education and sex



4.12 Distribution by area of residence

The table below shows that majority of the patients, 84 (42%) were residing in a high-density area followed by Medium density area (32.5%) and Low-density area (18%). The remaining 7.5% came from other residential areas that included farm and Village.

Table 6: Distribution by residential area type

Residential area type	Frequency	Percentage
Low Density	36	18
Medium Density	65	32.5
High Density	84	42
Other	15	7.5
Total	200	100

4.13 Availability of a Health facility in the area of residence

The majority of patients (86.5%) had a health facility in the vicinity of their area of residence compared to 13.5% who did not have.

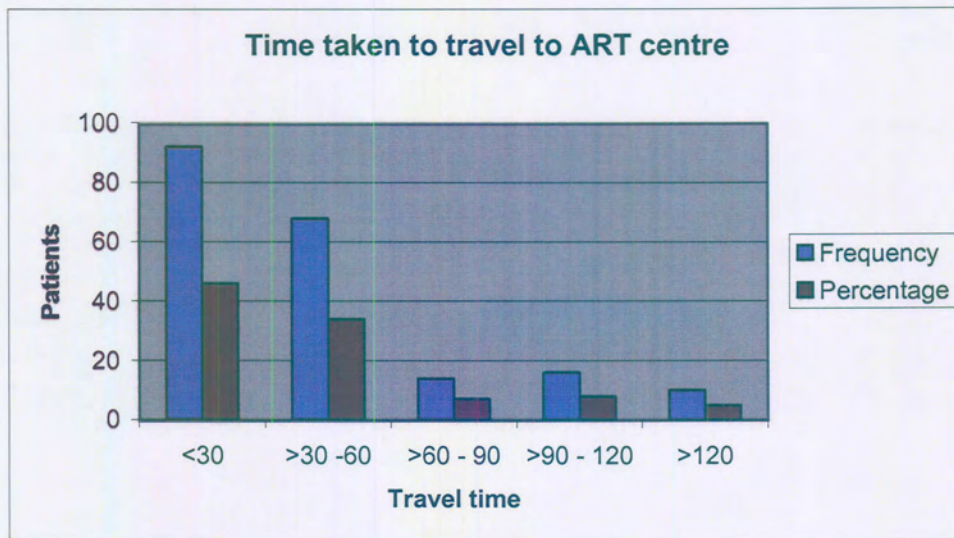
Table 7: Distribution of patients by access to health facility

Health facility	Frequency	Percentage
YES	173	86.5
NO	27	13.5
Total	200	100

4.14 Travel time to ART center from residential place

The mean time taken to travel from home to the ART center was 55 minutes. The median time was 45 minutes. The range was from 5 minutes to 360 minutes (6 hours). The majority of patients (80%) took 60 minutes or less to travel to the ART center. About 5% of the patients took over 120 minutes (2 hours) to travel.

Figure 12: Distribution of patients by travel time to ART center



CHAPTER 5: DISCUSSION

There were more females (61.5%) receiving antiretroviral treatment compared to males (38.5%) in the public sector, in Zambia. The 2001-2002 ZDHS showed that there were more females infected with HIV, than males with a rate of 18% to 13% respectively in the 15- 49 years age group. All being equal it is therefore expected that more females should access ART services than males. These findings are consistent with the CBOH ART quarterly reports for the year 2004, which also show that there are more females than men on ART in the public sector in Zambia.

Previous studies have however, shown that gender played an important role in accessing health services, in which being female created a barrier for women health services⁹.

According to the ZDHS of 2001-2002, the proportion found to be HIV positive rises from a level of 5% among the 15-19 years old age group, to 25% among those individuals' aged 30-34 years before falling to a level of 17% among the 45-49 years age group. In this study, the mean age of patients on antiretroviral therapy in the public sector was found to be 38.4 years. The proportion rises from 2% in the 15-19 years old age group, to 16% in the 30-34 years age group, then 21% in the 35-39 years age group and rising to reach the peak of 22.5% in the 40- 44 years old age group and falling to 13% in the 45-49 years old age group. The majority of the females were in the 35-39 years age group followed by the 40-44 years age group, whereas amongst the males, the majority were in the 40-44 years age group, followed by 35-39 years age group (20.8%). These finding differences can be explained by the fact that prevalence of HIV is higher in the female younger age group and peaks earlier than in males and that treatment is only initiated

when one is clinically eligible. Therefore it is expected that the majority of patients on treatment will be in an age group above the age group with the highest prevalence in both females and males.

Most of the patients (84.5%) were found to have been on ART for 18 months or less of which 62.5% had been on treatment for less than 12 months. This reflects the slow up take of the ART program in the initial stages when it started at, the 2-referral hospitals towards the end of 2002 and then in the provincial hospitals around mid 2003, which was about 18 months before this study.

The majority of patients were married representing 43% of the patients. This was followed by the widowed at 30.5%. In the married group the ratio of female to male was almost 1 to 1 whilst in the widowed group the female: male ratio was 3 to 1. This finding was consistent with other studies in Thailand¹¹. The high percentage in the married may mean that, where there is family support from the spouse, seeking care is increased. In the widowed group it is likely that loss of a partner (most likely from HIV/AIDS related causes) motivates the surviving partner to seek ART services. VanLandingham et al, in his study in Thailand, found that women living with HIV were more likely to have been widowed than the male persons living with HIV, reflecting a common pattern of the husbands becoming infected first and his wife subsequently contracting the virus from him¹¹.

Fifty three percent of the patients were not in employment, the majority of which were females. Eleven percent of the patients not in employment had a professional qualification. This demonstrates that HIV/AIDS leads to loss of employment, productivity and loss of income in the family.

The average net monthly income was five hundred forty six thousand and three hundred sixty five Kwacha (K546, 365), about 110 US dollars. Income levels did not follow a normal distribution; and to factor the outliers, the median income would therefore be appropriate to reflect here. The median net monthly income was three hundred and fifty thousand Kwacha, (K350, 000), about 73 US dollars. Most of the patients (42%) earned less than K250, 000 (USD 52), followed by 31% whose net monthly income was between K250, 000 and K500, 000. only 15% of the patients had a monthly net income of over K750, 000 (USD 156). This just reflects the low salaries in the country as whole.

The income patterns above explain why the majority of the patients (47%) felt that the cost of K40, 000 (USD 8), monthly for ART scheme in the public sector was very expensive and 35.5 % said the cost was expensive. Cost of a service can be hindrance for most people to access to health services especially where the majority of the people are poor. Where most people are poor, you would expect many people to be exempted from payments if such a policy exists. Although in Zambia it is recommended that at least twenty percent of the patients can be exempted and employers are encouraged to contribute seventy five percent of the cost of ARVs for their employees, only seven (7%) percent were found to be exempted by this study and only 8.5% of the patients were

being sponsored by their employer. The majority of the patients (49%) were self-sponsored whilst 12.5% of the patients were being sponsored by their spouses. Family members sponsored the rest of the patients. Other studies have shown, that economic constraints such as the lack of money to pay for the service or transportation or the high opportunity costs of lost time, create significant barriers for accessing health services^{9, 12, 13, 14, 15}. It is therefore most likely that many Zambians are not able to access the ART service due to economic constraints.

Those patients with higher education were more likely to receive ART from the public sector than those without higher education. Thirty one percent of those on treatment in this study had completed higher education, followed by those who had completed senior secondary education at 29.5%. All in all, 82.5% of the patients had attained secondary school education or above. This finding is consistent with the knowledge gained from various studies in the past that show that education plays an important role in seeking and accessing health care.

The majority of the patients were from high-density residential areas, followed by medium density area. It is possible that more people from the low-density residential areas seek care from the private sector. The private sector in Zambia has been providing ART from as early as 1998.

This study also shows that the majority of the patients had a health facility in the vicinity of their area of residence. Having a health facility nearby promotes easy access to care

whereas those living far from a health facility are usually disadvantaged in accessing care. Most patients on treatment took less than 1 hour to travel from their homes to the ART centre. This means that those staying close to the ART centres were more likely to be receiving treatment than those living far.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study has explored the demographic and socio-economic characteristics of patients accessing antiretroviral treatment in the public sector, in Zambia.

The results of the study show that more females are accessing antiretroviral treatment than males in the public sector in Zambia. The study also shows that the majority of patients on antiretroviral treatment are from the 35 – 44 years age group, with the majority of females being in the 35 –39 years age group and the majority of males in the 40 –44 years age group.

The majority of patients were found to have a net monthly income of K500, 000 or less (~USD 100), reflecting on the generally low incomes for the majority of Zambians. The forty thousand Kwacha charged every month for the ARVs was very high for most patients. The percentage of people exempted from the payment was also very low and considering that most Zambians are poor this clearly shows that a lot of people cannot access ARVs due to lack of funds and that institutions are not exempting many of those who can not afford to pay.

The study shows that most of the patients had a secondary education level or above. This is consistent with several other studies, which have demonstrated that education plays an important role in accessing of health services.

Patients residing in an area with a health facility or within one-hour travel to the ART centre were more likely to be on treatment than others, as can be seen from the results of this study where the majority of the patients had a health facility within their area of residence and travel time to ART centre was less than an hour for most patients. Most patients were from the high-density residential areas.

6.2 Recommendations

In order to make ARVs widely available to all those who need them and improve on the equity of access, the following recommendations are made: -

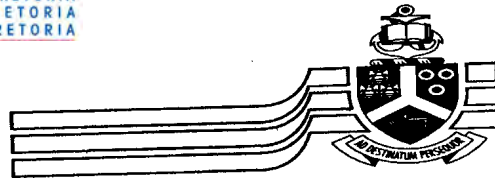
1. The Government should continue supporting the ART program by putting more resources and advocating for more external support so that there is universal access to ART to all in need who are clinically eligible.
2. The cost ART has added an extra burden on the already meagre resources for most people, it is therefore recommended that ARVs be provided for free or at a highly subsidized rate if many people are expected to benefit from this life prolonging treatment. This is also one of the ways through which the Ministry of Health/Central Board of Health can achieve its goal to have 100,000 people on treatment by the end of the year 2005.
3. There is also need to train more health in ART provision and open more ART centres to reduce on distances patients have to travel to access ART services. This is after all in line with the Governments' health policy whose vision is to provide cost effective quality health care as close to the family as possible.

4. Education plays an important role in people seeking and accessing health care services, it is hoped that Government in its existing education policy framework will continue to promote universal basic education for all. The education system should thus be more accessible to low-income families and rural populations, with special attention to the quality of the education provided and the need for girls to complete school. In addition, richer countries both inside and outside the region are encouraged to help Zambia improve her educational system.
5. There is need for further analytical studies to establish the strength of association of the factors that influence access to ART services.
6. The availability of antiretroviral drugs should not lead to losing focus on the preventative measures in the fight against HIV/AIDS and more HIV/AIDS comprehensive care programs should be put in place rather than having fragmented programs.

7.0 REFERENCES

1. Ministry of Health and Central Board of Health, Zambia. HIV/AIDS in Zambia: Background, Projections, Impacts and interventions. September 1999.
2. ORC Macro, Zambia Central Statistical Office, and Central Board of Health. 2002. Zambia Demographic and Health Survey, 2001-2002. Calverton, Maryland and Lusaka, Zambia: Measure DHS+ Programme, ORC Macro.
3. Zambian National HIV/AIDS/STI/TB Council. Zambian National HIV/AIDS/STI/TB Intervention Strategic Plan 2002-2005.2003.
4. Pallela F et al. Survival benefit of initiating antiretroviral therapy in HIV infected persons in different CD4+ cell strata. Am. Internal Med. April 15 2003; **138** (8): 620-626
5. Central Board of Health, An overview of the Zambian ART program, June 2003.
6. Central Board of Health, Policy Guidelines and Frame work for Introduction of ART in the Public sector in Zambia, 2002.
7. Central Board of Health, ART Implementation plan for Zambia. Draft, December 2003. Lusaka.
8. Ministry of Health, Uganda. Antiretroviral Treatment Policy for Uganda, April 2003.
9. WHO Expert consultation on Integrating Gender into HIV/AIDS programmes [monograph on the Internet]. Geneva. [3- 5 June 2002]. Available from http://www.who.int/hiv/pub/prev_care/Gender_hivaidsreviewpaper.pdf
10. Moses M, Rao G. The ethics of providing antiretroviral therapy in Brazil. AIDS; 15 (supplement 5): 581-588

11. VanLanding M, Im-em W, Yokota F. Access to treatment and care associated with HIV infection among members of AIDS support groups in Thailand; Population Studies Centre Research report. Report no. 04-550
12. Wood E, Alfonso V, Montaner JS, Tyndall MW, Schechter MT, O'Shaughnessy, et al. Treatment access and HIV/AIDS deaths in the era of 'chronic' infection in a setting that delivers antiretrovirals and AIDS care free of charge. Available from: URL: <http://www.pulsus.com/cahr2002/abs/abs309.htm>
13. Miller CC, Heath KV, Chan K, Spittal PM, O'Shaughnessy MV, Montaner JSG, Hugg R. Socio-demographic characteristics and response to therapy among first national participants in the British Columbia HIV/AIDS Drug treatment program. Available from: URL: <http://www.pulsus.com/cahr2002/abs/abs309.htm>
14. Green Carolyn, Access to treatment of HIV/AIDS and other diseases; an overview, November 2003. Available from: URL: <http://www.healthlink.org.uk/>
15. Katzenstein D, Laga M, Moatti JP; The evaluation of the HIV/AIDS Drug access Initiative in Cote D'Ivoire, Senegal and Uganda: how access to antiretroviral treatment can become feasible in Africa. AIDS Vol17 Supplement 3, July 2003. pS1-S4.
16. Ministry of Finance and Economic Planning, Public expenditure management and Financial Review, 2002.
17. National HIV/AIDS/STI/TB Council, The HIV/AIDS epidemic in Zambia; where are we now? Where are we going? September 2004.



University of Pretoria

Faculty of Health Sciences Research Ethics Committee
University of Pretoria

Tel (012) 339 8619 Fax (012) 339 8587

E Mail deepeka.behari@up.ac.za

Soutpansberg Road Private Bag x 385

MRC-Building Pretoria

Level 2, Room 20 0001

Date: 24/11/2004

Number : **S229/2004**

Title : Access to Antiretroviral treatment in the public sector in Zambia

Investigator : Dr Joseph Nikisi, School of Health Systems and Public Health, University of Pretoria
(SUPERVISOR: DR ANDY BEKE / DR D TSHIBANGU)

Sponsor : **USAID Zambia**

Study Degree : **Masters of Public Health**

This Student Protocol has been considered by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria on 23/11/2004 and found to be acceptable.

Prof P Carstens	BLC LLB LLD (Pret) Faculty of Law
Prof S.V. Grey	(female) BSc (Hons); MSc; DSc: Deputy Dean
Prof V.O.L. Karusseit	MBChB; MFGP (SA); M.Med (Chir); FCS (SA): Surgeon
Dr M E Kenoshi	MB,ChB; DTM & H (Wits); C.E.O. of the Pretoria Academic Hospital
Prof M Kruger	(female) MB.ChB.(Pret); Mmed.Paed.(Pret); PhdD. (Leuven)
Dr N K Likibi	MB.BCh.; Med.Adviser (Gauteng Dept. of Health)
Dr F M Mulaudzi	(female) Department of Nursing
Miss B Mullins	(female) BscHons; Teachers Diploma
Snr Sr J. Phatoli	(female) BCur (Et.Al) Senior Nursing-Sister
Prof H.W. Pretorius	MBChB; M.Med (Psych) MD: Psychiatrist
Reverend PDG Richards	B.Th. (UNISA), M.Sc. (Applied Biology) (Knights), M.Sc (Med) (Wits), TechRMS, DipRMS
Dr L Schoeman	(female) Bpharm, BA Hons (Psy), PhD
Dr C F Slabber	BSc (Med) MB BCh, FCP (SA) Acting Head; Dept Medical Oncology
Prof J.R. Snyman	MBChB, M.Pharm.Med: MD: Pharmacologist
Dr R Sommers	(female) MBChB; M.Med (Int); MPhar.Med
Dr TJP Swart	BChD, MSc (Odont), MChD (Oral Path) Senior Specialist; Oral Pathology
Prof C W van Staden	MBChB; Mmed (Psych); MD; FTCL; UPLM; Dept of Psychiatry

Student Ethics Sub-Committee

Mrs E Ahrens	(female) B.Cur
Dr L Schoeman	(female) Bpharm, BA Hons (Psy), PhD
Dr R Sommers	SECRETARIAT (female) MBChB; M.Med (Int); MPharMed
Dr S.J.C. van der Walt	(female) B Art et Scien (PU for CHE), M Soc Sc (UFS), M Ed (UFS), D.Cur (RAU)
Mrs N Lizamore	(female) BSc(Stell), BSc (Hons) (Pret), MSc (Pret) DHETP (Pret)
Prof R S K Apatu	MBChB(Legon); PhD(Cambridge)
Advocate A G Nienaber	(female) BA(Hons) (Wits); LLB; LLM (UP); Dipl Datametrics (UNISA)
Dr S I Cronje	DD (UP) – Old Testament Theology
Dr M M Geysler	(female) BSc; MBChB; BSc HONS (Pharm); Dip PEC; MpraxMed

PROF J R SNYMAN

MBChB, M.Pharm.Med: MD: Pharmacologist
CHAIRPERSON of the Faculty of Health Sciences Research
Main Ethics Committee - University of Pretoria

DR L SCHOEMAN

Bpharm, BA Hons (Psy), PhD
CHAIRPERSON of the Faculty of Health Sciences Research
Students Ethics Committee – University of Pretoria

THE UNIVERSITY OF ZAMBIA

RESEARCH ETHICS COMMITTEE

Telephone: 256067
Telegrams: UNZA, LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260-1-250753
E-mail: unzarec@zamtel.zm

Dean's Office
P.O. Box 50110
Lusaka, Zambia

Assurance No. FWA00000338
IRB00001131 of IOR G0000774

28 January, 2005
Our Ref.: 002-12-04

Dr Joseph Nikisi, BSc, MBChB
P.O. Box 37233
LUSAKA

Dear Dr Nikisi,

RE: SUBMITTED RESEARCH PROPOSAL

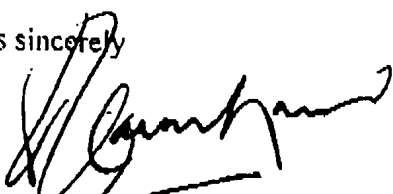
The following research proposal was presented to the Research Ethics Committee meeting held on 22 December, 2003 where changes were recommended. We would like to acknowledge receipt of the corrected version with clarifications. The proposal has now been approved. Congratulations!

Title of proposal: "Access to antiretroviral treatment in the public sector in Zambia"

Conditions:

- This approval is based strictly on your submitted proposal. Should there be need for you to modify or change the study design or methodology, you will need to seek clearance from the Research Ethics Committee.
- If you have need for further clarification please consult this office. Please note that it is mandatory that you submit a detailed progress report of your study to this committee every six months and a final copy of your report at the end of the study.
- Any serious adverse events must be reported at once to the Committee.
- Please note that when your approval expires you may need to request for renewal. The request should be accompanied by a Progress Report (Progress Report Forms can be obtained from the Secretariat).

Yours sincerely



Prof. J. T. Karashani, MB, ChB, PhD
CHAIRMAN
RESEARCH ETHICS COMMITTEE

Date of approval: 28 January, 2005

Date of Expiry: 27 January, 2006