

**KNOWLEDGE, ATTITUDE AND PREVENTION PRACTICES OF HIV/AIDS
AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN ZAMBIA**

by

MPOYI MULUMBA

Submitted in partial fulfilment of the requirements

for the degree of

MASTER OF PUBLIC HEALTH

in the subject

HEALTH STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF TR MAVUNDLA

JANUARY 2008

Student number: 35261994

DECLARATION

I declare that **KNOWLEDGE, ATTITUDE AND PREVENTION PRACTICES OF HIV/AIDS AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN ZAMBIA** is my own work and that all the sources that used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

A handwritten signature in black ink, appearing to read 'Mpoyi Mulumba', is written over a horizontal line.

SIGNATURE

(Mpoyi Mulumba)

DATE

KNOWLEDGE, ATTITUDE AND PREVENTION PRACTICES OF HIV/AIDS AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN ZAMBIA

STUDENT NUMBER: 35261994
STUDENT: MPOYI MULUMBA
DEGREE: MASTER OF PUBLIC HEALTH
DEPARTMENT: HEALTH STUDIES, UNIVERSITY OF SOUTH AFRICA
SUPERVISOR: PROF TR MAVUNDLA

ABSTRACT

The study sought to analyse teachers' level of knowledge, attitude and preventive practices in relation to HIV/AIDS in Petauke district in the eastern province of Zambia. The study sought to determine whether teachers were well informed about HIV/AIDS, had no discriminative behaviours towards HIV/AIDS-affected people, and finally whether their preventive practices were good in relation to HIV/AIDS.

The major inferences drawn from this study are that teachers are well informed about HIV/AIDS and that their attitudes are mostly non-discriminative. Preventive practices were found to be good but contradictory to the reality on the ground.

KEY CONCEPTS

Education; HIV/AIDS; Petauke district; teachers; Zambia.

ACKNOWLEDGEMENTS

I am grateful to God for the grace and opportunity to complete this study, and give Him thanks and praise.

My thanks and appreciation also to the following:

- Prof TR Mavundla, my supervisor, for all his support, guidance and everything he taught me
- Mwadi, my wife, for her love, patience and support
- My parents, family members, and friends for their encouragement and support throughout my studies
- The Petauke District Education Board, for permission to conduct the study in the district
- Dr D Tshibumbu, for the statistical analysis and interpretation
- Mrs Rina Coetzer, for formatting and finalising the manuscript
- Mrs lauma Cooper, for professionally and critically editing the manuscript

May God bless you all.

Dedication

*I dedicate this dissertation to my wife, Mwadi
and my three children,
Gracia, Emmanuel and Paul*

Chapter 1

Orientation to the study

1.1	INTRODUCTION	1
1.2	BACKGROUND TO AND RATIONALE FOR THE STUDY	1
1.3	SIGNIFICANCE OF THE STUDY	2
1.4	PROBLEM STATEMENT	3
1.5	RESEARCH QUESTIONS.....	3
1.6	RESEARCH OBJECTIVES	4
1.7	DEFINITIONS OF TERMS	4
1.8	RESEARCH DESIGN AND METHODOLOGY	6
1.9	OUTLINE OF THE STUDY.....	6
1.10	CONCLUSION.....	6

Chapter 2

Literature review

2.1	INTRODUCTION	8
2.2	PURPOSE OF A LITERATURE REVIEW	8
2.3	HIV/AIDS KNOWLEDGE	9
2.3.1	Basic facts about HIV/AIDS.....	9
2.3.1.1	What is HIV?.....	9
2.3.1.2	What is AIDS?	9
2.3.1.3	HIV/AIDS transmission	9
2.3.1.4	History of HIV/AIDS	10
2.3.1.5	Signs and symptoms	12
2.3.1.6	Diagnosis of HIV/AIDS	14
2.3.1.7	Treatment	14
2.3.2	HIV/AIDS knowledge and teachers	15
2.3.3	HIV/AIDS and Zambian teachers.....	16
2.3.4	HIV/AIDS knowledge among Zambians	16

Table of contents	Page
2.4	ATTITUDE TOWARDS HIV/AIDS 17
2.4.1	Stigmatisation and discrimination 17
2.4.1.1	Forms of HIV/AIDS-related stigma and discrimination..... 17
2.4.1.2	Stigma and discrimination in the workplace..... 18
2.4.1.3	Factors contributing to HIV/AIDS-related stigma 19
2.4.2	Attitudes towards HIV/AIDS among Zambian teachers 19
2.5	HIV/AIDS PREVENTION 20
2.5.1	HIV/AIDS prevention among Zambians..... 21
2.5.2	HIV/AIDS prevention among teachers..... 21
2.6	CONCEPTUAL FRAMEWORK 22
2.6.1	Reasoned action..... 22
2.6.2	Planned behaviour..... 22
2.7	CONCLUSION..... 23

Chapter 3

Research design and methodology

3.1	INTRODUCTION 24
3.2	RESEARCH DESIGN 24
3.2.1	Quantitative 24
3.2.2	Descriptive..... 25
3.2.3	Survey 25
3.2.4	Generalisation 25
3.3	ETHICAL CONSIDERARATIONS 26
3.4	RESEARCH METHODOLOGY 27
3.4.1	Population..... 28
3.4.2	Sample and sampling 28
3.4.3	Data collection 29
3.4.4	Data-collection instrument 29
3.4.5	Validity and reliability 31
3.4.5.1	Validity..... 31
3.4.5.2	Reliability 32
3.5	PILOT STUDY 33
3.6	DATA ANALYSIS 33

3.7	CONCLUSION.....	34
-----	-----------------	----

Chapter 4

Data analysis and interpretation

4.1	INTRODUCTION	35
4.2	SECTION A: BIOGRAPHIC.....	35
4.2.1	Respondents' gender (n=82)	35
4.2.2	Respondents' level of education (n=82)	36
4.2.3	Respondents' tribes (n=82)	36
4.2.4	Respondents' ages (n=82)	37
4.2.5	Respondents' marital status (n=82)	37
4.2.6	Schools where respondents are based	38
4.3	SECTION B: KNOWLEDGE	38
4.3.1	Episodic knowledge (n=82)	38
4.3.2	Conceptual knowledge (n=82)	39
4.3.3	Descriptive knowledge (n=82)	40
4.3.4	Analysis of knowledge using demographic details	41
4.3.4.1	Knowledge and respondents' gender (n=82).....	41
4.3.4.2	Knowledge and respondents' level of education (n=82)	42
4.3.4.3	Knowledge and respondents' tribe (n=82)	42
4.3.4.4	Knowledge and respondents' age (n=82)	43
4.3.4.5	Respondents' marital status and factual knowledge (n=82)	43
4.4	SECTION C: ATTITUDE TOWARDS HIV/AIDS	44
4.4.1	Analysis of respondents' attitudes using demographic details.....	45
4.4.1.1	Respondents' demographic details and attitudes towards HIV/AIDS	45
4.4.1.1.1	Respondents' gender and attitudes towards HIV/AIDS (n=82).....	45
4.4.1.1.2	Respondents' educational level and attitudes towards HIV/AIDS (n=82)	46
4.4.1.1.3	Respondents' marital status and attitude towards HIV/AIDS (n=82)	46
4.4.1.1.4	Respondents' age and attitude towards HIV/AIDS (n=82).....	46
4.4.1.1.5	Respondents' tribe and attitude towards HIV/AIDS (n=82).....	47
4.4.1.2	Respondents' demographic details and stigma and discrimination	47
4.4.1.2.1	Respondents' gender and stigma (n=82).....	47
4.4.1.2.2	Respondents' education and stigma (n=82)	48
4.4.1.2.3	Respondents' marital status and stigma attitude (n=82).....	48
4.4.1.2.4	Respondents' age and stigma attitude (n=82)	48

Table of contents	Page
4.4.1.2.5 Respondents' tribe and stigma attitude (n=82)	49
4.5 SECTION D: PREVENTIVE PRACTICES AGAINST HIV/AIDS	49
4.5.1 Analysis of preventive practices according to demographic details	50
4.5.1.1 Abstinence	51
4.5.1.1.1 Abstinence and respondents' gender (n=82)	51
4.5.1.1.2 Abstinence and respondents' level of education (n=82)	51
4.5.1.1.3 Abstinence and respondents' tribe (n=82)	52
4.5.1.1.4 Abstinence and respondents' age (n=82)	52
4.5.1.1.5 Abstinence and respondents' marital status (n=82)	53
4.5.1.2 Faithfulness and demographic details	53
4.5.1.2.1 Faithfulness and respondents' gender (n=82)	53
4.5.1.2.2 Faithfulness and respondents' level of education (n=82)	54
4.5.1.2.3 Faithfulness and respondents' tribe (n=82)	54
4.5.1.2.4 Faithfulness and respondents' age (n=82)	55
4.5.1.2.5 Faithfulness and respondents' marital status (n=82)	55
4.5.1.3 Condom use and demographic details	56
4.5.1.3.1 Condom use, barrier methods and respondents' gender (n=82)	56
4.5.1.3.2 Condom use, barrier methods and respondents' level of education (n=82)	56
4.5.1.3.3 Condom use, barrier methods and respondents' tribe (n=82)	57
4.5.1.3.4 Condom use, barrier methods and respondents' age (n=82)	57
4.5.1.3.5 Condom use, barrier methods and respondents' marital status (n=82)	58
4.6 CONCLUSION	58
 Chapter 5	
 Findings and recommendations	
5.1 INTRODUCTION	59
5.2 RESEARCH OBJECTIVES	59
5.3 FINDINGS	59
5.3.1 Level of knowledge	59
5.3.2 Attitude towards HIV/AIDS	60
5.3.3 Preventive practices	60
5.4 LIMITATIONS	61

Table of contents	Page
5.5 RECOMMENDATIONS	61
5.5.1 To improve the knowledge, attitudes and HIV/AIDS preventive practices among teachers	61
5.5.2 Future research	62
5.6 CONCLUSION.....	62
BIBLIOGRAPHY	63

List of tables

Page

Table 4.1	Respondents' level of education of (n=82)	36
Table 4.2	Respondents' tribes (n=82)	36
Table 4.3	Respondents' ages (n=82)	37
Table 4.4	Respondents' episodic knowledge (n=82).....	39
Table 4.5	Respondents' conceptual knowledge (n=82)	40
Table 4.6	Respondents' descriptive knowledge (n=82).....	40
Table 4.7	Summary statistics of knowledge (n=82).....	41
Table 4.8	Respondents' knowledge according to gender (n=82)	41
Table 4.9	Respondents' knowledge according to level of education (n=82)	42
Table 4.10	Respondents' knowledge according to tribe (n=82)	42
Table 4.11	Respondents' knowledge according to age (n=82)	43
Table 4.12	Respondents' factual knowledge according to marital status (n=82)	43
Table 4.13	Respondents' attitudes towards HIV/AIDS (n=82).....	44
Table 4.14	Respondents' attitudes according to gender (n=82).....	45
Table 4.15	Respondents' attitude according to level of education (n=82).....	46
Table 4.16	Respondents' attitude according to marital status (n=82)	46
Table 4.17	Respondents' attitude according to age (n=82).....	46
Table 4.18	Respondents' attitude according to tribe (n=82).....	47
Table 4.19	Respondents' gender and stigma (n=82)	47
Table 4.20	Respondents' educational level and stigma (n=82).....	48
Table 4.21	Respondents' marital status and stigma (n=82)	48
Table 4.22	Respondents' age and stigma (n=82)	48
Table 4.23	Respondents' tribe and stigma (n=82)	49
Table 4.24	Respondents' preventive practices.....	50
Table 4.25	Abstinence according to gender (n=82)	51
Table 4.26	Abstinence according to level of education (n=82).....	51
Table 4.27	Abstinence according to tribe (n=82).....	52
Table 4.28	Abstinence according to age (n=82).....	52
Table 4.29	Abstinence according to marital status (n=82)	53
Table 4.30	Faithfulness according to gender (n=82).....	53
Table 4.31	Faithfulness according to level of education (n=82)	54
Table 4.32	Faithfulness according to tribe (n=82).....	54
Table 4.33	Faithfulness according to age (n=82)	55
Table 4.34	Faithfulness according to marital status (n=82).....	55
Table 4.35	Condom use, barrier methods according to gender (n=82).....	56
Table 4.36	Condom use, barrier methods according to level of education (n=82)	56
Table 4.37	Condom use, barrier methods according to tribe (n=82)	57

List of tables	Page
Table 4.38	Condom use, barrier methods according to age (n=82) 57
Table 4.39	Condom use, barrier methods according to marital status (n=82)..... 58

List of figures	Page
Figure 4.1 Respondents' gender (n=82).....	35
Figure 4.2 Respondents' marital status (n=82).....	37
Figure 4.3 Schools where respondents taught	38

List of abbreviations

ADC	AIDS dementia complex
AIDS	Acquired Immune Deficiency Syndrome
FAO	Food and Agriculture Organisation
HIV	Human Immunodeficiency Virus
MOE	Ministry of Education
MOH	Ministry of Health
NGOs	Non-governmental organizations
PCP	Pneumocystis carini pneumonia
PLWA	People living with AIDS
PRP	Primary reading programme
SIAPAC	Social Impact Assessment and Policy Analysis Corporation
WHO	World Health Organization
ZNAC	Zambia National HIV/AIDS/STI/TB Council

List of annexures

Annexure A	Request for permission to conduct a research study
Annexure B	Consent letter for participants
Annexure C	Permission letter
Annexure D	Questionnaire

CHAPTER 1

Orientation to the study

1.1 INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS) is a major health problem throughout the world and particularly in the developing countries (Chatterjee, Bauer, Ram, Ohar, Sandhukukhan & Dan 2001:27). Human Immunodeficiency Virus (HIV)/AIDS causes devastation, destroys communities and takes away hope for the future (MOE 2003:3).

Despite various methods and attempts to fight the disease, it is still rapidly spreading. In Zambia, the main focus is to build up a HIV/AIDS-free generation (Zambia National HIV/AIDS/STI/TB Council 2004:5). According to Peltzer (2003:351), young people should be educated about this deadly disease as early as possible. Therefore, teachers have a critical role in disseminating HIV/AIDS information. If teachers have a major role, then, it is essential that they have adequate knowledge about HIV/AIDS.

1.2 BACKGROUND TO AND RATIONALE FOR THE STUDY

By the end of 2005, 38,6 million adults and children were living with HIV; 4,1 million new cases were diagnosed, and 2,8 million people had died from AIDS (UNAIDS 2006b:6).

The spread of HIV/AIDS is centred on African countries, particularly in Sub-Saharan Africa (Willis 2002:10). Out of 4,8 million new infections worldwide in 2003, more than 95% occurred in developing countries. Approximately 1 700 children under the age of 15 years and 600 young people aged 15 to 24 years became infected with HIV every day (UNAIDS 2006b:10-16).

In Zambia, it is estimated that 1 147 000 children are orphans from HIV (Central Statistical Office 2005:iii). Of these 488 189 are maternal, 515 565 are paternal and 143 862 are dual orphans, indicating that there are more paternal than maternal orphans (Central Statistical Office 2005:iii).

Since the beginning of the pandemic, over 60 million people have been infected with HIV and more than 20 million have died. The highest death rate is among Africans with HIV/AIDS (Willis 2002:10). Willis adds that the spread of HIV/AIDS can be either insidious or like fire, with most people not knowing how or when they caught the virus; many never knowing they have it, and many who do know, not telling anyone. Adler (2001:99) emphasises that the prevention of new infections remains the best method in fighting HIV/AIDS. Willis (2002:29) maintains that this prevention should focus on educating young people about sex and sexuality since it is well known that sex is responsible for more than 85% of HIV transmission.

According to a sexual behaviour survey in Zambia in 2003, some adolescents had sex by the age of 14 years therefore it is advisable that sex education be started at puberty, between 10 and 14 years of age, when young people have not yet adopted sexual habits (Central Statistical Office 2004:5). Therefore teachers have a critical role in the prevention of HIV/AIDS, since they interact with young people on a daily basis (Peltzer 2003:349).

However, teachers are considered a high-risk group with respect to HIV/AIDS, particularly in high prevalence countries where the epidemic has had a shattering impact on the teaching profession (Sikazwe 2000:2). In Zambia, for example, more than two thousand teachers died of HIV/AIDS in 2001 (MOE 2003:5). The epidemic also seriously undermines the quality of education and results in teacher shortages and absenteeism (Tamukong 2004:7). Since teachers are at high risk, it is important to determine their knowledge of, attitudes towards and use of preventive measures against HIV/AIDS.

Accordingly, the researcher wished to examine teachers' knowledge, attitude and prevention practices about HIV/AIDS in the Petauke district of the Eastern Province of Zambia.

1.3 SIGNIFICANCE OF THE STUDY

The virus that causes AIDS has infected and is infecting many Zambians. According to the 2001/2002 Zambian demographic and health Survey about 16 percent of the adult

population (15-49 years for females and 15-59 years for males) in Zambia was HIV positive.

The present focus is on preventing new infections. The researcher is of the opinion that the involvement of all sectors of society is needed, particularly the education sector where teachers play a critical role in educating young people in an effort to reduce high-risk sexual behaviours.

The findings of this study will benefit the education sector in Zambia in general and the Petauke district in particular, and assist non-governmental organisations (NGOs) that are fighting the epidemic.

1.4 PROBLEM STATEMENT

The HIV/AIDS epidemic is a serious health and development problem in many countries. In Zambia, an estimated 1 100 000 people are infected with HIV and out of these 200 000 people are eligible for antiretroviral treatment. Of these, only 50 000 people are on treatment (Zambia National Broadcasting Corporation 2006).

In Zambia, West and Central Africa, HIV/AIDS has affected all sectors, including the education sector (Tamukong 2004:4). The HIV prevalence rate among teachers is in the order of 40 percent and HIV-related illness and deaths will continue to cause critical shortages and lower the quality of education (MOH 2005a:7). There is thus a need to ensure that policy, strategies and programmes are introduced and implemented by all stakeholders in the fight against HIV/AIDS. Teachers have a major role in this fight.

1.5 RESEARCH QUESTIONS

The researcher formulated the following questions to guide the study:

- What knowledge do the teachers in Petauke district have about HIV/AIDS?
- What are the teachers in Petauke district's attitudes towards HIV/AIDS?
- What preventive measures do the teachers in Petauke district use against HIV/AIDS?

1.6 RESEARCH OBJECTIVES

The study wished to

- describe the knowledge of the teachers in Petauke district about HIV/AIDS
- describe the teachers in Petauke district's attitudes towards HIV/AIDS
- describe the preventive measures that the teachers in Petauke district use against HIV/AIDS
- make recommendations to improve the knowledge, attitudes and HIV/AIDS preventive practices among teachers, and for future research

1.7 DEFINITIONS OF TERMS

For the purposes of this study, the following terms are used as defined below:

- **Knowledge**

Collins English Dictionary (1991:860) defines knowledge as “the facts, feelings or experiences known by a person or group of people; the state of knowing; awareness, consciousness, or familiarity gained by experience or learning; specific information about a subject”. According to Katzenellenbogen, Joubert and Abdoul Karim (1997:169-175) the most important items of knowledge need to be unambiguous and should not pre-empt, lead or steer respondents into certain answers. For the purpose of this study, knowledge was an awareness that the respondents had of HIV/AIDS (how people can get the HIV virus, and preventive measures against the virus).

- **Attitude**

Attitude is “the way a person views something or tends to behave towards it, often in an evaluative way” (*Collins English Dictionary* 1991:98). In this study, attitude referred to the feelings, thoughts or beliefs of the respondents towards HIV/AIDS and people living with AIDS (PLWA).

- **Prevention**

Collins English Dictionary (1991:1231) defines prevention as “the act of preventing; a hindrance, obstacle, or impediment”. In this study, prevention referred to the measures the respondents used to protect themselves against the HIV virus.

- **Primary school teacher**

A primary school teacher refers a teacher who educates pupils from Grade 1 to Grade 7. In Zambia, Grades 8 and 9 are included as senior primary school. However most primary schools in Zambia are upgraded to grade 9 and are now called basic schools.

- **Secondary school teacher**

In Zambia, a secondary school teacher educates pupils from Grade 10 to Grade 12.

- **Human Immunodeficiency Virus (HIV)**

HIV causes AIDS. HIV destroys the biological ability of the human body to fight opportunistic infections such as tuberculosis. A person can be infected with HIV for a long time without showing any symptoms of the disease. Nonetheless, he or she can transmit the infection to uninfected people through sexual intercourse with them (MOH 1999a:1).

- **Acquired Immune Deficiency Syndrome (AIDS)**

AIDS itself is defined in terms of how much deterioration of the immune system has taken place as seen by the presence of opportunistic infections. Virtually all infected persons will eventually die from the disease, unless they succumb to something else first. Most will be dead within ten years of infection and many will die even sooner (MOH 1999a:3).

1.8 RESEARCH DESIGN AND METHODOLOGY

The researcher selected a descriptive survey to examine the knowledge of, attitudes towards and prevention practices regarding HIV/AIDS of the primary and secondary school teachers in Petauke district, Eastern Province in Zambia.

The design was chosen because it was inexpensive and allowed data collection to be done within a short period. The data-collection instrument was a self-administered questionnaire. The population and sample were selected by means of random sampling. The data was analysed using the Microsoft SSPS computer program.

1.9 OUTLINE OF THE STUDY

Chapter 1 briefly discusses the problem, purpose and significance of the study, and research design and methodology, and defines key terms.

Chapter 2 discusses the literature review.

Chapter 3 describes the research design and methodology.

Chapter 4 presents the data analysis and interpretation.

Chapter 5 concludes the study, discusses its limitations, and makes recommendations for practice and further research.

1.10 CONCLUSION

HIV/AIDS has had a devastating effect on teachers in Zambia and in West and Central Africa. There is thus a need for effective strategies to help to reduce the further spread of HIV/AIDS and mitigate the impact on the infected and affected by enabling Zambia's educational system to respond effectively to the pandemic (MOE 2002a:1). At the same time, experience has shown that a multi-sectoral approach is needed to lower HIV infection rates and reduce the negative impacts of this deadly disease (Zambia National HIV/AIDS/STI/TB Council 2003:4).

This chapter discussed the problem that motivated the researcher to conduct the study, the purpose, objectives and significance of the study, and the research design and methodology, and defined key terms.

Chapter 2 discusses the literature review conducted for the study.

CHAPTER 2

Literature review

2.1 INTRODUCTION

Chapter 1 briefly discussed the problem as well as the purpose and significance of the study. This chapter discusses the literature reviewed on schoolteachers' knowledge of, attitudes towards, and preventive practices regarding HIV/AIDS. The researcher conducted an extensive literature review, using the key words: *HIV/AIDS and teachers* and *HIV/AIDS and education sector*. Local and international books and journals were consulted.

2.2 PURPOSE OF A LITERATURE REVIEW

The purpose of the literature review was to find out what is already known about and to examine existing research on HIV/AIDS in order to acquire insight into the topic under study.

According to Polit and Hungler (1999:80-88), a literature review

- Assists researchers in identifying a research problem and developing or refining research questions.
- Helps them develop a conceptual context in which the study will fit.
- Helps them compare findings with previous findings in order to explore what further research would be able to achieve.
- Assists them interpret their findings with previous findings in order to develop implications and recommendations.

De Vos (2001:57) points out that a literature review assists researchers to select the appropriate research design and methodology, including the data-collection instruments, for their studies.

2.3 HIV/AIDS KNOWLEDGE

2.3.1 Basic facts about HIV/AIDS

HIV/AIDS is known to affect individuals as well as systems. Chelala (2004:1) reports that although HIV/AIDS is a health problem that can be contained by effective health education programmes, the deadly virus has not been contained and continues to spread so widely that it has a profound adverse impact on communities and institutions. The education sector is one of the institutions hardly hit by the virus.

2.3.1.1 *What is HIV?*

Human immunodeficiency virus or HIV is the virus that causes AIDS. A member of a group of viruses called retroviruses, HIV infects human cells and uses the energy and nutrients provided to the cells for them to grow and reproduce (Evian 2005:5).

2.3.1.2 *What is AIDS?*

Acquired immunodeficiency syndrome or AIDS is a disease in which the body's immune system breaks down and is unable to fight off infections, known as "opportunistic infections, and other illnesses that take advantage of a weakened immune system (Evian 2005:8).

2.3.1.3 *HIV/AIDS transmission*

HIV is an increasing health problem worldwide, and can be transmitted by sexual intercourse, intravenous drug abuse, through occupational accidents and transfusion of blood and blood products, and from mother to foetus in utero, during labour and during lactation (Willis 2002:29).

In Sub-Saharan Africa, Gisselquit and Potterat (2005:162) found that heterosexual transmission accounts for most of adult infections. Over 90% of HIV infections in Africa in 2001 were due to unsafe sex (WHO 2006:12). In Zambia, heterosexual transmission is exacerbated by the high prevalence of STIs, the poor status of women, and high-risk

sexual practices (MOH 2005c:5). In addition, the following factors perpetuate HIV transmission in Zambia (MOH 2005c:5-6):

- *High levels of poverty.* Poverty directly or indirectly creates vulnerability to HIV/AIDS, with a resultant complex and mutually reinforcing inter-relationship between HIV/AIDS and poverty. The majority of the poor are women and they often sell their bodies in order to survive.
- *High mobility.* The high mobility of specific social groups, including long distance truckers, uniformed security personnel and teachers, who are usually moved from school to school and leave behind their partners, puts them at risk.
- *Socio-cultural beliefs and practices.* Certain beliefs and practices, such as having multiple sexual partners, dry sex and the traditional practice of widow/widower cleansing, also facilitate the transmission of HIV.
- *Stigma.* Stigmatisation leads to discrimination, silence, shame, denial and blaming others. Consequently, corrective action, such as diagnosis and/or treatment, is often delayed.
- *Gender issues.* Issues that perpetuate the dominance of male interests and lack of self-assertiveness on the part of women in sexual relations put both men and women at risk.
- *Alcohol abuse.* People tend to forget to use condoms when they are under the influence of alcohol.

2.3.1.4 History of HIV/AIDS

- ***The normal immune system***

The normal immune system protects the body by recognising antigens or invading bacteria and viruses and reacts to them. It consists of lymphoid organs and tissues, including the bone marrow, thymus gland, lymph nodes, spleen, tonsils, adenoids, appendix, and blood and lymphatic vessels. All components are vital in the production and development of lymphocytes or white blood cells (Family Health International 2004:37). B cells and T lymphocytes (T-cells) are produced from the stem cells in the bone marrow. B cells mature in the marrow, but T-cells travel and mature in the thymus gland. B cells recognize specific antigen targets and secrete specific antibodies that

coat the antigen by making them more vulnerable to phagocytes or triggering the complement system (Family Health International 2004:37).

T-cells regulate the immune system and kill cells that bear specific target antigens. Each T-cell has a surface marker (for example, CD4, CD8 and CD3) that distinguishes it from other cells. CD4 cells are helpers that activate B cells, killer cells (CD8) and macrophages when a specific antigen is present. Phagocytes include monocytes and macrophages – large white blood cells that engulf and digest cells carrying antigenic particles. When the immune system is weakened or destroyed by a virus such as HIV, the body is vulnerable to opportunistic infections (Bartlett & Finkheiner 2001:66; Family Health International 2004:37).

- ***HIV life cycle***

Host cells infected with HIV have a very short lifespan therefore HIV continuously uses new host cells to replicate itself. Up to 10 million individual viruses are produced daily. In the first 24 hours after exposure, the virus attacks or is captured by dendritic cells (a type of phagocyte) in the mucous membranes and skin. Within five days of exposure, infected cells make their way to lymph nodes and eventually to the peripheral blood where viral replication becomes very rapid. The five phases are: binding , entry; reverse transcriptase; budding and maturation (Willis 2002:17).

- ***HIV progression***

After transmission of HIV, people do not develop AIDS immediately. There is often a lengthy period that may last from 1 to 10 years from infection with HIV to development of AIDS. Some people may survive a long time while others develop AIDS quickly and die soon after. A few may never develop AIDS. The average time from infection to development of AIDS is about nine years. Thus, on average, people do not develop AIDS until nine years after becoming infected (Zambia National HIV/AIDS/STI/TB Council 2004:6). For most of this incubation period, they may not have any symptoms and, therefore, may not even be aware that they are infected. This contributes to the spread of HIV since they can transmit the infection to others without knowing. People become infectious as soon as they become HIV infected. People with full-blown AIDS

remain infectious. For children, the incubation period is much shorter because their systems are not yet fully developed.

2.3.1.5 Signs and symptoms

- ***Primary infection***

This stage is usually without symptoms and may have a window period when no reaction is detected. The window period may last up to six months. However, an influenza-like illness lasting up to four weeks may be present. This illness may include headache, sore throat and some glandular swelling. Along with these symptoms there may be chronic or intermittent diarrhoea, which also recurs in the later stages of HIV infection. A decrease in Cd4 is usually observed (Willis 2002:19).

- ***Asymptomatic stage***

This is called the clinical latency period when nothing seems to be happening, but Cd4-cells continue to decline and opportunistic infections start to appear. During the latency period, the viral production continues with each HIV cell provoking its host cell to make about 250 HIV clones before destroying the cell. When the viral load reaches critical levels, the immune system is suppressed to such a degree that other infections, which under normal circumstances would not be difficult to resist, gain entrance (hence the designation “opportunistic infections”) and the individual is further weakened and will die (Willis 2002:19).

- ***AIDS-related complex (ARC)***

ARC is diagnosed in HIV-infected people presenting with two or more of the following signs and symptoms which have not responded to symptomatic treatment over a few months (Evian 2005:30-33):

- An intermittent (continuous) fever around or above 38°C
- More than ten percent weight loss
- Intermittent (continuous) diarrhoea
- Night sweats

- Swollen lymph nodes
- Fatigue/lethargy
- ***Opportunistic infections***

The main opportunistic infections that make up AIDS are bacterial, fungal and/or and some of their symptoms include (Bartlett & Finkheiner 2001:139; Evian 2005:32-35; Willis 2002:21):

Bacterial

- *Mycobacterium avium intracellular*, causing chills/night sweats, tiredness, fever, diarrhoea, abdominal pain and weight loss.
- *Mycobacterium tuberculosis*, often associated with HIV infection and causing cough, fever, night sweats and weight loss.

Fungal

- *Candida*, causing thrush (white plaque) in the mouth and on the tongue.
- *Coccidioides immitis*, causing respiratory symptoms and/or pneumonia.
- *Cryptococcus neoformans*, causing nausea, vomiting, tiredness, fever, confusion and changes in behaviour.
- *Pneumocystis carinii*, causing pneumocystis carini pneumonia (PCP), one of the most common conditions found in AIDS, and accounting for about 85% of lung infection in people with HIV.

People with PCP show shortness of breath over 6 to 8 weeks and/or inability to take a deep breath, non-productive cough, mild persistent fever (37,5-38°C) (Evian 2005:32-35).

Parasitic

- *Cryptosporidium*, causing episodic diarrhoea illness and weight loss.
- *Toxoplasma Gondi*, can affect the brain, moving from headache, sluggishness, fever and confusion to convulsions and neurological damage.

Viral

- *Cytomegalovirus*
- *Herpes simplex*, causing genital herpes and varicella zoster

Malignancies

Kaposi sarcoma, a cancerous, non-painful condition of the connective tissue of blood vessels, which is a slow, chronic condition producing small, flat bruise-like blotches up to 3 cm in diameter, gradually becoming firm nodules or plaques, some of which may be removed by laser surgery (Willis 2002:21).

HIV may also affect the brain directly through AIDS dementia complex (ADC), giving rise to loss of concentration, confusion and mild memory loss, leg weakness and loss of balance, depression, withdrawal, apathy, and anxiety.

2.3.1.6 *Diagnosis of HIV/AIDS*

- HIV is diagnosed by testing the blood of an infected person, using variations of the ELISA technique (WHO 2006:10-15).
- EIA (enzyme immunoassay), where the individual is said to be HIV-positive if the reagent changes colour.
- IFA (radioimmunoprecipitation), like the EIA and IFA, but using a radioactive medium.
- PCP (polymerase chain reaction), which involves combining a DNA sample (taken from the suspected HIV-infected person).

2.3.1.7 *Treatment*

No cure has yet been found for the deadly virus. However, antiretroviral therapy is helpful in:

- Prolonging and improving the quality of life of HIV-infected people.

- Reducing the viral load as much as possible, for as long as possible to halt disease progression and/or reducing resistant variants (Family Health International 2004:217).
- Achieving immune reconstitution that is quantitative (Cd4 count in normal range) and qualitative (pathogen-specific immune response).

2.3.2 HIV/AIDS knowledge and teachers

AIDS is one of the most serious challenges facing the education systems of poor countries. The devastating effect of AIDS on schools is of major concern in fighting the epidemic. Teachers, many of whom are part of an older generation that did not receive AIDS education, are highly susceptible to HIV infection (Piot 2006:3).

Besides family members, teachers are often the main adults with whom young people interact on a daily basis. Consequently, teachers have a critical role as a source of accurate information and people with whom young people can raise sensitive and complicated issues about sexuality and HIV/AIDS. James-Traore, Finger, Ruland and Sarariaud (2006:3) point out that ideally, as trusted gatekeepers of information, teachers can be instrumental in imparting knowledge and skills to young people. Teachers can function as role models, advocates for healthy school environments, guides for students in need of services, resources for accurate information, mentors and effective instructors. However, to do so, teachers need skills and knowledge as well as support from the education system and broader community (James-Traore et al 2006:3).

In South Africa, Peltzer (2003:354) found that most secondary school teachers were knowledgeable about HIV/AIDS but did not have support in terms of resources and materials to help their pupils. However, a minority had some misconceptions about HIV/AIDS. For example, some did not know that HIV cannot be contracted through mosquito bites.

In Nigeria, Oschi, Nakalema and Oschi (2005:178) found that teachers knew about HIV/AIDS and most knew how it could be transmitted.

2.3.3 HIV/AIDS and Zambian teachers

Zambia has an HIV/AIDS education strategic plan and HIV/AIDS guidelines for educators (MOE 2002b, 2003), and a national HIV/AIDS/STI/TB policy and national HIV/AIDS strategic plan (MOH 2005b; 2005c). HIV/AIDS/STI/TB and life skills education are integrated in primary, but not in secondary education.

Several strategies have been put in place to reach teachers with in-service training for HIV/AIDS, such as teachers' group meetings in the school programme. The primary diploma, which is provided through distance learning, has a specific module on life skills, and the primary reading programme (PRP) has introduced HIV/AIDS-related texts. Several books have been produced, printed and distributed to help teachers integrate HIV/AIDS in their lessons (MOE 2003:9-11).

2.3.4 HIV/AIDS knowledge among Zambians

The majority of Zambians have heard of HIV/AIDS. According to the Central Statistical Office (2006:17), 97% of males and females, as well as 98% of urban and 96% of rural dwellers knew about HIV/AIDS. Awareness that HIV/AIDS can be avoided and that a healthy-looking person can be HIV-infected is also high and has gradually increased. Females who knew that HIV/AIDS could be avoided increased from 78% in 1998 to 91% in 2005, and males increased from 86% in 1998 to 94% in 2005 (Central Statistical Office 2006:17).

Awareness of HIV prevention is high. Statistics reveal that the ways to prevent HIV transmission rated best were abstinence (95%), being faithful to one partner (90%), and consistent condom use (82%) (Central Statistical Office 2006:17-18). The 2003 Zambian sexual behaviour survey found that three quarters of the respondents were aware of all three methods (Central Statistical Office 2004:21). In 2005, 84% of males and 86% of females knew of mother-to-child transmission of HIV. It also revealed that knowledge about HIV/AIDS among adolescents (15-19 years) and young adults (20-24) increased over time. Knowledge that HIV/AIDS can be avoided increased from 75% in 1998 to 88% in 2005 among male adolescents, and from 87% to 96% among young adult males.

Knowledge that HIV/AIDS can be avoided likewise increased among female adolescents (15-19) and young adult females (20-24). In 1998, 71% of female adolescents and 79% of young adult females said they knew HIV infection could be avoided. In 2005, the percentages were 88% and 91% for female adolescents and young female adults, respectively (Central Statistical Office 2006:18).

2.4 ATTITUDE TOWARDS HIV/AIDS

The researcher examined stigmatisation and discrimination as part of the attitude towards HIV/AIDS.

2.4.1 Stigmatisation and discrimination

Stigma is a powerful tool of social control and can be used to marginalize or to exclude and exercise power over individuals who show certain characteristics like those of people living with HIV/AIDS (Beadle de Palamo 2004:1-3). The stigma attached to HIV/AIDS and discrimination against PLWA leads to social ostracism and alienation as well as a deterioration of civil, economic and political rights. A major problem in attempting to deal with this epidemic is that people often avoid learning about or admitting to being infected with HIV because of the stigma and fear of discrimination (Zambia National HIV/AIDS/STI/TB Council 2004:40).

Early in the epidemic, sexuality was found as a contributing factor to the epidemic, then drug use, and race and ethnicity were seen as the next components of the epidemic.

2.4.1.1 *Forms of HIV/AIDS-related stigma and discrimination*

According to UNAIDS (2002:10-12) the AIDS stigma is expressed in a variety of ways, including

- Ostracism, rejection, and avoidance of people with AIDS
- Discrimination against PLWAs
- Compulsory HIV testing without prior consent or protection of confidentiality
- Violence against persons perceived to have AIDS or to be infected with HIV
- Quarantine of persons with HIV

The AIDS stigma is effectively universal, but its forms vary from country to country. In some societies, laws, rules and policies can increase the stigmatisation of people living with HIV/AIDS. Such legislation may include compulsory screening and testing, as well as limitations on international travel and migration. In most cases, discriminatory practices such as the compulsory screening of risk groups both further the discrimination of such groups and create a false sense of security among individuals not considered high-risk (UNAIDS 2006b:7-12). Laws that insist on the compulsory notification of HIV/AIDS cases, and the restriction of people's right to anonymity and confidentiality, as well as the right to movement of those infected, are justified on the ground that the disease forms a public health risk (UNAIDS 2006b:7-12).

Stigmatisation and discrimination can arise from community-level responses to HIV/AIDS. For example, individuals suspected of being infected or of belonging to a particular group (for example, gays, lesbians) are frequently harassed and, in extreme circumstances, subjected to violence and murdered (UNAIDS 2004a:2-3). Attacks on men assumed to be gay have increased, and HIV and AIDS-related murders reported in Brazil, Colombia, Ethiopia, India, South Africa, Thailand and elsewhere. In December 1998, Gugu Dhlamini was stoned and beaten to death by neighbours in a township near Durban, South Africa, after speaking out openly on World AIDS Day about her HIV status (UNAIDS 2004a:2).

2.4.1.2 Stigma and discrimination in the workplace

The general hostility towards HIV/AIDS makes it crucial to deal with stigmatisation and discrimination in the workplace (Magnusson 2005:124-126) Stigmatisation is a complex, diverse and deeply rooted phenomenon that is dynamic in different cultural settings.

In Sweden, Magnusson (2005:124) found that in the rapidly changing environment of retrenchment and restructuring, many workers are still not aware of their human rights and are still discriminated against. Moreover, the most prominent form of termination of employment or refusal to offer employment is based on employers unnecessary fears about the transmission of HIV in the workplace.

2.4.1.3 Factors contributing to HIV/AIDS-related stigma

In many societies people living with HIV and AIDS are seen as shameful and the infection is associated with minority groups or behaviours, such as homosexuality. In some cases, HIV/AIDS is linked to 'perversion' and those infected are punished. HIV/AIDS is seen as the result of personal irresponsibility. Sometimes, HIV and AIDS are believed to bring shame upon the family or community and while negative responses to HIV/AIDS exist widely, they often feed upon and reinforce dominant ideas of good and bad with respect to sex and illness, and proper and improper behaviours(UNAIDS 2002:10)

According to UNAIDS (2004b:7-12), the following factors contribute to the HIV/AIDS stigma:

- HIV/AIDS is a life-threatening disease.
- People are afraid of contracting HIV.
- The disease is associated with behaviours (such as sex between men and injecting drug use) that are already stigmatised in many societies.
- People living with HIV/AIDS are often considered responsible for becoming infected.
- Religious or moral beliefs lead some people to believe that having HIV/AIDS is the result of moral faults (such as promiscuity or deviant sex) that deserve to be punished.

2.4.2 Attitudes towards HIV/AIDS among Zambian teachers

In a study of teachers in Zambia, Garbus (2003:67) found that 2/3 of teachers with relatives who were ill or had died because of HIV/AIDS were unable or unwilling to talk about the problem with family or friend. Such isolation can easily affect psychological well-being and ability to teach.

The problem of stigmatisation and discrimination is not restricted to teachers. According to the 2005 Zambian sexual behaviour survey (Central Statistical Office 2006:30-34) 36% of Zambians would like the HIV-positive status of their family members to be kept secret and 28% think that people with HIV/AIDS should be ashamed of themselves.

2.5 HIV/AIDS PREVENTION

HIV/AIDS prevention involves simultaneously tackling individual risk-taking and contextual or societal vulnerability, using various strategies to decrease infection rates including (UNESCO 2005:28):

- Social marketing of condoms.
- Education for groups with highest infection rates (such as sex workers).
- Media coverage regarding social and cultural customs that expose participants to heightened risk (such as wife inheritance or circumcision ceremonies).
- Voluntary counselling and testing for those who believe themselves to be infected.
- School-based programmes.

Of these strategies, school-based HIV prevention programmes, starting as early as primary school, are viewed as a necessary step to protect the general population from further infection (MOE 2003:5). Kelly (2000:6) present the following four main reasons given in favour of such programmes:

- Seventy percent of children enter primary school and 67% of primary school entrants in sub-Saharan Africa only reach Grade 5.
- Most youth in sub-Saharan Africa initiate sexual activity while still of school-going age, whether or not they are in school.
- Initiating prevention programmes in primary schools prior to sexual debut is the most effective strategy in reducing STI rates.
- Schools provide an established venue for intervention.

HIV prevention should not be confined to dealing with the immediate causes of HIV transmission but should extend to dealing with the underlying and structural causes that in the long term support the continuation of the epidemic. For example, provision of better/more public health, education, social protection, water and sanitation infrastructure, job creation, governance, personal empowerment, transport efficiency, and international cooperation will all create conditions with less likelihood of HIV transmission (UNAIDS 2006a:123-135).

2.5.2 HIV/AIDS prevention among Zambians

HIV is not spread by casual contact or by mosquitoes, in the air or water. In Zambia, sexual contact is the direct cause of about 80% of new infections (Zambia National HIV/AIDS/STI/TB Council 2004:25). Preventing infections among women in the first place is also an important strategy to limit mother-to-child transmission. Consequently, most prevention programmes are ultimately about ways to ensure safe and responsible sexual practices that minimize HIV transmission (Ministry of Health 2005c:8-9). Risky sexual behaviour can expose either partner to the possibility of HIV infection. Sexual relations with sex workers or when either partner has an STI are examples of risky sexual behaviour. In Zambia, any unprotected sexual relationship with a partner whose HIV status is positive or unknown carries the risk of HIV transmission (Zambia National HIV/AIDS/STI/TB Council 2004:25-26).

In Zambia, HIV/AIDS prevention efforts are concentrated on promoting sexual abstinence or late sexual debut for adolescents, being faithful to one partner or encouraging mutual faithfulness, and consistent and correct condom use. This approach is often abbreviated as ABC (A for Abstinence, B for Being faithful and C for Condoms). Education campaigns have been used as a major thrust of efforts to reduce risky sexual behaviour. Education efforts assume that increased knowledge about the risks will eventually translate into reductions in risky sexual behaviour (Central Statistical Office 2006:66). Early sexual debut is considered a risk factor for HIV infection, because early first sex, often before marriage, increases the chances of young people having risky and many sexual encounters (MOH 2005c:6). Males respondents 20-49 years old median age for sex was 19,5 and 18,5 for females. For the younger age group 15-24, media age at first sex is 18,5 for males and also for females in 2005 (Central Statistical Office 2006:30-37). The same source shows as well that there is a high percentage of married respondents with an extramarital partner and also a high percentage who had an STI in the previous year.

2.5.3 HIV/AIDS prevention among teachers

Education can work to reduce its likelihood by developing values and attitudes like say yes to life and no to premature, casual unacceptable sex and sexual experimentation. "This can only be done by providing information and inculcating skills that will help self-

protection, promoting behaviour that will strengthen the young person's capacity to prevent personal disaster" (Kelly 2000:7-8).

In Zambia, the government response to AIDS has been systematic, by means of policy, resources and support for schools, learners, teachers and other employees (MOE 2000; 2002a; 2002b; MOH 2005c). Nevertheless, teachers and the general population still do not yet protect themselves adequately. According to Chelala (2004:1), two teachers die for every one that graduates from training school, and one teacher dies every day in Zambia from AIDS-related diseases. Kinsman and Harrison (1999:598) found that in some African countries, teachers still feature as agents of forced sex.

2.6 CONCEPTUAL FRAMEWORK

The researcher used the theories of reasoned action and planned behaviour as the conceptual framework for the study.

2.6.1 Reasoned action

Ajzen's theory of reasoned action is based on the assumptions that people are usually quite rational and make systematic use of the information available to them and consider the implication of their actions in a given context at a given time before they decide to engage or not engage in a given behaviour (Ajzen 1991:179-211). Thus, a person who holds strong beliefs that positively valued outcomes will result from certain behaviour will have a positive attitude towards the behaviour. Conversely a person who holds strong beliefs that negatively valued outcomes will result from the behaviour will have a negative attitude towards the behaviour (Glanz, Rimer & Lewis 2002:70).

2.6.2 Planned behaviour

According to the theory of planned behaviour, behaviour reflects behavioural intention. Moreover, attitude towards the behaviour, subjective norms, and perceived behavioural control determine intention. Perceived behavioural control refers to the perceived ease or difficulty of performing the behaviour and reflects past experiences and anticipated obstacles. This theory is frequently applied to explain various health behaviours such as HIV/STI prevention (Glanz et al 2002:77).

2.7 CONCLUSION

This chapter discussed the literature review conducted for the purposes of the study. Chapter 3 covers the research design and methodology of the study.

CHAPTER 3

Research design and methodology

3.1 INTRODUCTION

This chapter describes the research design and methodology used in the study.

3.2 RESEARCH DESIGN

Polit and Beck (2004:49) describe a research design as “a blueprint, or outline, for conducting a study in such a way that maximum control will be exercised over factors that could interfere with the validity of the research results. The research design is the researcher’s overall plan for obtaining answers to the research questions guiding the study.”

Burns and Grove (2001:211) state that a research design is “the end result of a series of decisions made by the researcher concerning how the study will be implemented”.

The researcher chose a quantitative descriptive research design to describe the respondents’ knowledge of, attitude towards and preventive practices regarding HIV/AIDS.

3.2.1 Quantitative

Burns and Grove (2001:26) refer to quantitative research as “a formal, objective and systematic process in which numerical data are used to obtain information about the phenomenon under study”. Burns and Grove point out that quantitative studies seek to describe variables, examine relationships among variables, and determine cause-effect interactions between variables. Moreover, rigour helps to identify and limit the effects of extraneous variables not under study (Burns & Grove 2001:26).

3.2.2 Descriptive

The purpose of descriptive research is “to provide the opinions of respondents regarding the phenomenon being studied” (Burns & Grove 2001:44). Furthermore, descriptive research provides an accurate portrayal or account of the characteristics of a particular individual event, or group in real-life situations for the purpose of discovering new meaning, describing what exists, determining the frequency with which something occurs, and categorising information. Descriptive studies provide valuable baseline information.

Descriptive research presents a picture of the specific details of a situation, social setting or relationship and focuses on “how” and “why” questions (Neuman 2000:22). A researcher therefore begins with a well-defined subject and conducts research to describe it accurately (De Vos 2001:109).

In descriptive research, a survey is frequently selected as data-collection technique (Babbie & Mouton 2001:80).

3.2.3 Survey

Surveys can be used to collect a lot of data from a large number of people in a short space of time thereby involving less cost (Burns & Grove 2001:568). As data-collection technique, a survey uses questionnaires or personal interviews (Burns & Grove 2001:239). According to Babbie and Mouton (2001:244), a questionnaire is “a document containing questions designed to solicit information appropriate for analysis. Usually it is information from respondents about their attitudes, knowledge, beliefs and feelings.”

3.2.4 Generalisation

Polit, Beck and Hungler (2001:462) define generalisation as “the degree to which the results of the study can be applied from a sample to a larger population”.

3.3 ETHICAL CONSIDERATIONS

Nurses and medical personnel face ethical dilemmas in their daily duties, as do researchers, when people are used as study respondents in an investigation.

Mosby's Medical, Nursing and Allied Health Dictionary (2002:416) defines ethics as "the science or study of moral values or principles, including ideals of autonomy, beneficence, and justice".

Collins English Dictionary (1991:533) defines ethics as "the philosophical study of the moral value of human conduct and of the rules and principles that ought to govern it; a social, religious, or civil code of behaviour considered correct, esp. that of a particular group, profession, individual; the moral fitness of a decision, course of action".

Burns and Grove (2001:83) emphasise that to be ethical in research means that the rights of researcher and participants are protected. De Vos (2001:24) points out that ethical guidelines serve as a basis upon which researchers can evaluate their conduct.

Accordingly, the researcher observed the following ethical principles during the study

- **Permission to conduct the study**

The researcher requested (annexure A) and obtained written permission from the Petauke District Education Board (annexure C) to conduct the study in the area. The schools concerned were informed of the Education Board's authorisation and their permission also obtained.

- **Beneficence**

The principle of beneficence encompasses freedom from harm and exploitation. The researcher informed the respondents of the nature, purpose and significance of the study, and assured them that no harm would come to them (Polit & Hungler 1999:134).

- **Respect for human dignity**

Respect for human dignity includes the right to self-determination and to full disclosure. The respondents' right to self-determination was honoured because they could decide independently, without any coercion, whether or not to participate in the study; had the right not to answer any questions that caused discomfort; could disclose or not disclose personal information, and could ask for clarification, if necessary. Furthermore, the respondents were treated with dignity and as independent people throughout the study (Polit & Beck 2004:147).

The right to full disclosure was respected because the researcher described the nature of the study as well as the respondents' rights to participate or refuse to participate in the study. The researcher stressed that the respondents could withdraw from the study at any time should they so wish, without any penalty. The respondents gave informed consent in writing (annexure B) (Polit & Beck 2004:147).

- **Justice**

In accordance with justice, the respondents' privacy and right to anonymity and confidentiality were respected at all times (Polit & Beck 2004:147). No names or identifying details were provided on the questionnaires so that no information could be linked to any respondent. Only the researcher and the statistician had access to the data.

3.4 RESEARCH METHODOLOGY

Polit and Beck (2004:731) describe research methodology as "the techniques used to structure a study and to gather and analyse information in a systematic fashion". The research methodology included population, sampling and sample, data collection, data-collection instrument, validity, and reliability.

3.4.1 Population

Polit and Beck (2004:50) define a population as “the totality of all subjects that conform to a set of specifications, comprising the entire group of persons that is of interest to the researcher and to whom the research results can be generalized”.

A population is a group of people who share common traits or attributes of interest to the researcher, from whom a sample will be drawn and to whom the findings will be generalised (Burns & Grove 2001:83).

In this study, the population consisted of all the primary and secondary schoolteachers in Petauke district in the Eastern Province of Zambia. There were 541 primary schoolteachers (320 males and 221 females) and 172 secondary schoolteachers (139 males and 33 females) (Petauke District Education Office 2007:3).

3.4.2 Sample and sampling

Burns and Grove (2001:83) describe a sample as “a segment of the population on which a study is conducted”. Sampling is “the process of selecting participants from a population” (Babbie & Mouton 2001:164).

In order to ensure that all the teachers had an equal chance of selection, the researcher used probability sampling, by means of stratified random sampling followed by systematic sampling (De Vos 2001:204-205).

First, the population was divided into two strata according to gender and each group was given 50% of the sample in order to acquire sufficient representation from each strata.

Next systematic sampling was used, selecting the first respondent randomly from each group. Subsequent respondents were selected according to certain intervals, namely every tenth name on the list for males and every twentieth for females since there were 459 males and 254 females.

It should be noted that because of financial, time and accessibility constraints, however, the researcher was compelled to remove some of the schools from the study. The main problem was that some schools were inaccessible due to the extremely poor condition of the roads since the study was conducted in a remote area.

3.4.3 Data collection

Polit and Beck (2004:32) define data as “information obtained during the course of an investigation or study”. Burns and Grove (2001:43) define data collection as “the precise, systematic gathering of information relevant to specific research objectives or questions”. According to Burns and Grove (2001:50), data can be collected in several ways, depending on the study, and utilising a variety of methods. However, the instrument used must accomplish the researcher’s objectives. In order to collect the data, the researcher, a medical doctor, obtained permission to be away from the hospital where he is employed for three days.

3.4.4 Data-collection instrument

Data-collection instruments refer to devices used to collect data such as questionnaires, tests, structured interview schedules and checklists. Data was collected using a structured questionnaire, which is a written schedule that respondents complete themselves (Polit & Beck 2004:349). A questionnaire was selected because it was less costly and required less time (Polit & Beck 2004:350).

Brink (1996:154) describes a questionnaire as a self-report instrument where respondents write their answers to presented questions. Polit and Beck (2004:349) define a questionnaire as “a method of gathering information from respondents about attitudes, knowledge, beliefs and feelings”.

After an in-depth literature review, the researcher designed the questionnaire (annexure D), based on Ngcamu’s questionnaire and the *Zambia Sexual Behaviour Survey, 2005*. The questionnaire consisted of four sections:

Section A: Demographic information

This section covered the respondents' gender, age, educational level, tribe and marital status.

Section B: Knowledge about HIV/AIDS

Collins English Dictionary (1991:860) defines knowledge as “the facts, feelings or experiences known by a person or group of people; the state of knowing; awareness, consciousness, or familiarity gained by experience or learning; specific information about a subject”. For the purpose of this study, knowledge was an awareness that the respondents had of HIV/AIDS (how people can get the HIV virus, and preventive measures against the virus).

This section contained three sub-sections, namely episodic, conceptual, and descriptive knowledge.

Section B1: Episodic knowledge

Flick (1997:4) describes episodic knowledge as “knowledge linked to concrete circumstances”. This section consisted of five questions on the series or incidences of the disease; when the disease was discovered; its spread in Zambia and worldwide, and awareness of the disease.

Section B2: Conceptual knowledge

Conceptual knowledge refers to an understanding of a concept, phenomenon or topic. In this case, it referred to HIV/AIDS, including the immunopathy of the virus. Five questions assessed the respondents' conceptual knowledge.

Section B3: Descriptive knowledge

The questions in this sub-section assessed the respondents' knowledge of means and plans to fight the disease and prevent its spread.

Section C: Attitudes towards HIV/AIDS

Attitude is “the way a person views something or tends to behave towards it, often in an evaluative way” (*Collins English Dictionary* 1991:98). In this study, attitude referred to the respondents’ feelings, thoughts or beliefs about HIV/AIDS and PLWA. The respondents’ indicated their agreement or disagreement with eight statements according to a five-point Likert scale. Stigma, discrimination, and attitude towards HIV/AIDS and education were explored.

Section D: Preventive practices against HIV/AIDS

Collins English Dictionary (1991:1231) defines prevention as “the act of preventing; a hindrance, obstacle, or impediment”. In this study, prevention referred to the measures the respondents used to protect themselves against HIV/AIDS.

3.4.5 Validity and reliability

With any type of measurement, two considerations are very important, namely validity and reliability. They are important criteria to evaluate a research instrument in terms of its adequacy and quality.

3.4.5.1 Validity

Validity is concerned with the soundness and effectiveness of the measuring instrument, and refers to the ability of the instrument to measure only what it is intended to measure, given the context in which it is applied (Polit & Hungler 1999:418). According to Babbie and Mouton (2001:143), validity refers to “the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration”. Validity can be sub-categorised as external and internal validity. External validity refers to the generalisability of the research findings to other settings or samples other than the one studied (Polit & Beck 2004:718). Burns and Grove (2005:218) describe external validity as “the extent to which the results can be generalised beyond the sample used in the study. This usually depends on the degree to which the sample represents the population.”

In this study, the researcher paid attention to face, content and construct validity.

- *Face validity* means that an instrument empirically appears to measure what is needed, given the construct that is supposed to be measured (Polit & Hungler 1999:418). Brink (1996:168) defines face validity as “a judgment based on the face value of an instrument”. In addition, face validity also serves to assess if the items or questions presented seem to measure the main concepts of the study.
- *Content validity* refers to how representative or adequate the compiled questions are for the construct being measured (De Vos 2001:167). To ensure content validity, the researcher designed the questionnaire (annexure D) primarily on Ngcamu’s questionnaire and the *Zambia Sexual Behaviour Survey, 2005*.
- *Construct validity* involves determining the degree to which an instrument successfully measures a theoretical construct (De Vos 2001:167). In other words, it checks whether the tool does measure what it was supposed to measure.

3.4.5.2 Reliability

Reliability is concerned with the consistency, accuracy, dependability and comparability of a measuring technique and refers to how consistent or stable the data-collection instrument is.

Polit and Hungler (1999:411) describe reliability as the consistency with which a tool measures the attribute it is supposed to measure. If a study and its results are reliable, other researchers using the same method will obtain the same results.

According to De Vos (2001:168), reliability indicates the accuracy or precision of an instrument and refers in general to the extent to which independent administration of the same instrument (or highly similar instruments) consistently yields the same or similar results under comparable conditions.

The test-retest method, split-half technique, Cronbach’s alpha co-efficient and other methods can be used to assess the reliability of a tool (Polit & Hungler 1999:420). In this study, the test-retest assessed the stability and Cronbach’s alpha co-efficient,

Kuder-Richardson's formula 2, and Spearman-Brown's prophecy formula tested the internal consistency or reliability of the questionnaire (Polit & Hungler 1999:415-420).

3.5 PILOT STUDY

A pre-test or pilot study is "a small-scale trial of the data-collection instrument to determine clarity of questions and whether the instrument elicits the desired information" (Polit & Beck 2004:296). To ensure reliability and validity, and determine clarity of the items and consistency of responses, the researcher conducted a pilot study with ten teachers in the district, who did not participate in the main study. The participants found the questions satisfactory and had no difficulty in completing the questionnaire. Therefore, the researcher made no changes to the questionnaire.

3.7 DATA ANALYSIS

Data analysis refers to "techniques used to reduce, organise and give meaning to data" (Burns & Grove 2005:41). Descriptive statistics, frequency tables and percentages were used in the data analysis and interpretation.

Polit and Beck (2004:452-453) describe data analysis as a process of organising data in order to provide structure and elicit meaning. Moreover, the process of quality data analysis consists of the following stages:

- preparation of data for analysis
- description of the sample
- testing the reliability of measurement
- exploratory analysis of the data
- confirmatory analysis guided by the hypotheses, questions or objectives
- post hoc analysis

A statistician analysed and interpreted the data using the Microsoft Statistical Package for the Social Sciences (SSPS) 13.0 computer program (Polit & Beck 2004:469). The data were presented in frequencies, tables, graphs, and diagrams.

3.8 CONCLUSION

This chapter described the research design and methodology, including the population, sample, ethical considerations, data-collection instrument and data analysis.

Chapter 4 discusses the data analysis and interpretation.

CHAPTER 4

Data analysis and interpretation

4.1 INTRODUCTION

This chapter presents the data analysis and interpretation. The questionnaire had four sections: demographic information, knowledge about HIV/AIDS, attitude towards HIV/AIDS, and preventive practices against HIV/AIDS. Each section was looked at as an item. A total of 82 questionnaires were distributed to respondents and a 100% response rate was obtained.

4.2 SECTION A: BIOGRAPHIC

This section included the respondents' gender, age, educational level, tribe and marital status.

4.2.1 Respondents' gender (n=82)

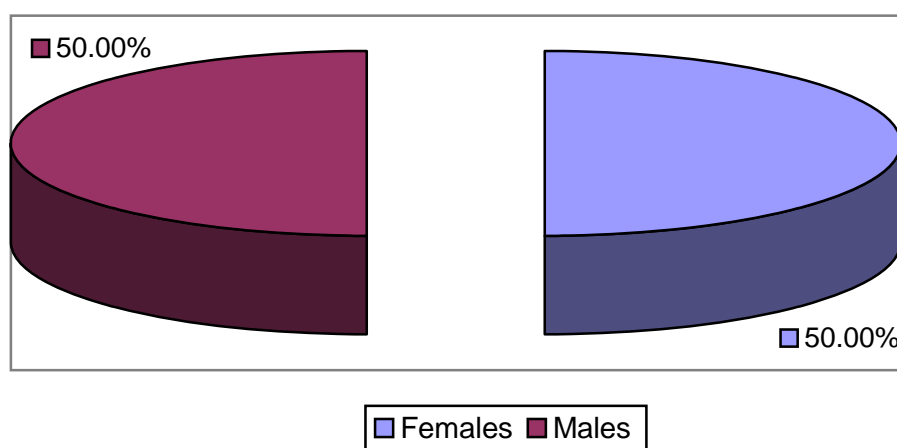


Figure 4.1
Respondents' gender (n=82)

Of the respondents, 50% (n=41) were females and 50% (n=41) were males (see figure 4.1).

4.2.2 Respondents' level of education (n=82)

Table 4.1 Respondents' level of education of (n=82)

Education level	n	%	Valid %	Cumulative%
Grade 12	03	3,60	3,60	3,60
Certificate	34	41,46	41,46	45,06
Diploma	43	52,43	52,43	97,49
Degree	02	2,40	2,40	100,00
Total	82	100,00	100,00	-

Of the respondents, 52,43% (n=43) had a three-year post-secondary school diploma; 41,46% (n=34) had a certificate; 3,60% (n=3) had Grade 12, and 2,4% (n=2) had a degree in Education (see table 4.1).

4.2.3 Respondents' tribes (n=82)

Table 4.2 Respondents' tribes (n=82)

Tribe	n	%	Cumulative %
Bemba	11	13,40	13,4
Chewa	19	23,17	36,6
Kunda	03	3,70	40,2
Lozi	01	1,20	41,5
Lunda	01	1,20	42,7
Ngoni	11	13,40	56,1
Nsenga	21	25,60	81,7
Tonga	06	7,30	89,0
Tumbuka	9	11,00	100,0
Total	82	100,00	-

Of the respondents, 25,60% (n=21) were Nsengas; 23,17% (n=19) were Chewas; 13,40% (n=11) were Bembas; 13,40% (n=11) were Ngonis; 11,0% (n=9) were Tumbukas; 3,70% (n=3) were Kundas, and 2,40% (n=2) belonged to the Lozi and Lunda tribes, respectively (see table 4.2).

4.2.4 Respondents' ages (n=82)

Table 4.3 Respondents' ages (n=82)

Age group	n	%	Valid %	Cumulative %
Younger than 21	0	0,00	0,00	0,00
21-30	29	35,36	35,36	35,36
31-40	35	42,68	42,68	78,04
41-50	14	17,07	17,07	95,11
51-60	4	4,80	4,80	100,00
Total	82	100,00	100,00	-

Of the respondents, 42,68% (n=35) were aged 31-40; 35,36% (n=29) were 21-30; 17,07% (n=14) were 41-50; 4,80% (n=4) were 51-60, and 0,0% (n=0) were under 21 (see table 4.3).

4.2.5 Respondents' marital status (n=82)

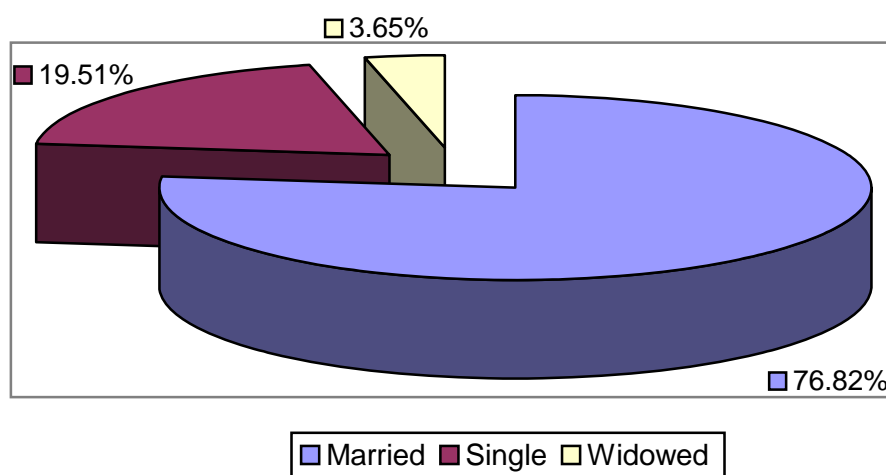


Figure 4.2
Respondents' marital status (n=82)

Of the respondents, 76,82% (n=63) were married, 19,51% (n=16) had never married, and the remaining 3,65% (n=3) were widowed (see figure 4.2).

4.2.6 Schools where respondents are based

The respondents were based at different basic (primary) and secondary schools in Petauke District (see figure 4.3).

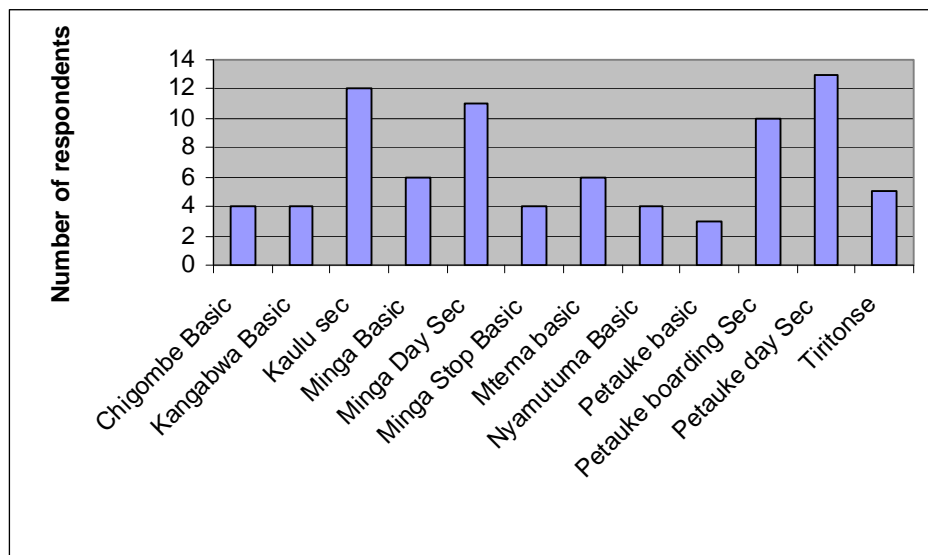


Figure 4.3
Schools where respondents taught

4.3 SECTION B: KNOWLEDGE

Collins English Dictionary (1991:860) defines knowledge as “the facts, feelings or experiences known by a person or group of people; the state of knowing; awareness, consciousness, or familiarity gained by experience or learning; erudition or informed learning; specific information about a subject”. Section B of the questionnaire examined the respondents’ knowledge of HIV/AIDS. A total of 15 questions, covering episodic, conceptual and descriptive knowledge, were used.

4.3.1 Episodic knowledge (n=82)

Flick (1997:4) defines episodic knowledge as knowledge linked to concrete circumstances.

The respondents' episodic knowledge was measured by five questions covering issues like the year in which HIV/AIDS was discovered, the disease awareness in Zambia and its spread among Black people (see table 4.4).

Table 4.4 Respondents' episodic knowledge (n=82)

ITEM		True		Unsure		False		Total	
		n	%	n	%		%	n	%
1	HIV/AIDS is a disease for Zambia only	0	0,00	0	0,00	82	100,00	82	100,0
2	HIV/AIDS is a disease of Black people only	1	1,20	0	0,00	81	98,70	82	100,0
3	Our young children (8-14 years) are not prone to HIV/AIDS.	1	1,20	1	1,20	80	97,50	82	100,0
4	HIV/AIDS was discovered in the 1970's.	33	40,24	19	23,17	30	36,50	82	100,0
5	Zambia is the most HIV/AIDS-affected country in the world	17	20,73	7	8,50	58	70,73	82	100,0

Table 4.4 indicates that the majority of the respondents did not agree that HIV/AIDS is a disease for Zambia only 100% (n=82); HIV/AIDS is a disease of Black people only 98,7% (n=81); children 8 to 14 years old are not prone to HIV/AIDS 97,5% (n=80), and Zambia is the most HIV/AIDS-affected country in the world 70,73% (n=58). With regard to HIV/AIDS being discovered in the 1970s, however, the respondents were divided: 36,5% (n=30) disagreed 40,24% (n=33) agreed and 23,17% (n=19) unsure.

4.3.2 Conceptual knowledge (n=82)

Conceptual knowledge refers to a person's understanding of HIV/AIDS itself. Five items on what the HIV does to the immune system measured the respondents' conceptual knowledge (see table 4.5).

Table 4.5 Respondents' conceptual knowledge (n=82)

Item		True		Unsure		False		Total	
		n	%	n	%	n	%	n	%
6	HIV stands for Human Immune Deficiency Virus	71	86,58	01	1,2	10	12,19	82	100,0
7	HIV strengthens the immune system	4	4,90	01	1,2	77	95,10	82	100,0
8	HIV increases white blood cells	6	7,40	01	1,2	75	92,60	82	100,0
9	HIV is not the only cause of AIDS	19	23,80	02	2,4	61	76,20	82	100,0
10	HIV kills red blood cells	35	42,68	04	4,8	43	52,43	82	100,0

Table 4.5 indicates that of the respondents, 86,58% (n=71) knew what HIV stands for; 95,1% (n=77) knew that HIV does not strengthen the immune system; 92,6% (n=75) knew that HIV destroys white blood cells; 76,2% (n=61) were aware that HIV is the only cause of AIDS, while only 42,68% (n=35) knew that HIV kills red cells.

4.3.3 Descriptive knowledge (n=82)

Descriptive knowledge refers to how to fight this deadly disease and its spread to future generations. Five items, covering various beliefs on HIV control, measured the respondents' descriptive knowledge (see table 4.6).

Table 4.6 Respondents' descriptive knowledge (n=82)

Item		True		Unsure		False		Total	
		n	%	n	%	n	%	n	%
11	There is nothing one can do to change the HIV/AIDS situation in the country	5	6,10	0	0,0	77	93,90	82	100,0
12	Our children (8-14yrs) are too young to indulge in sexual activities	33	40,24	1	1,2	48	58,50	82	100,0
13	The only warfare against HIV/AIDS is educating younger generations before they indulge in sexual activities	78	95,12	0	0,0	4	4,88	82	100,0
14	The government plan is for the future generation to be HIV free	74	90,24	2	2,4	6	7,30	82	100,0
15	We as a community do not have any control over the spread of HIV/AIDS	2	2,40	0	0,0	80	97,56	82	100,0

Table 4.6 indicates that of the respondents, 93,9% (n=77) believed they could do something to change the HIV/AIDS situation in the country; 95,12% (n=78) thought that

education could help young people to stay free from HIV; 90,24% (n=74) believed that the government plan is to have a generation free from HIV/AIDS; 97,56% (80) did not agree that the community had no control over the spread of AIDS, and 58,50% (48) found the statement false that children (8-14) were too young to indulge in sexual activity.

4.3.4 Analysis of knowledge using demographic details

Table 4.7 indicates low measures of central tendencies below the half of 7,5 marks, out of 15 questions.

Table 4.7 Summary statistics of knowledge (n=82)

Mean	4.48
Median	4
Mode	4
Range	7
Minimum	1
Maximum	8

Total knowledge was analysed in relation to respondents' demographic characteristics in an effort to determine whether there was any significant difference between the different groups.

4.3.4.1 Knowledge and respondents' gender (n=82)

Table 4.8 Respondents' knowledge according to gender (n=82)

Gender	Mean	n	SD	SE
Female	4.66	41	1.175	0.183
Male	4.29	41	1.569	0.245
Total	4.48	82	1.390	0.153

Table 4.8 shows that the mean level of knowledge among the females was slightly higher than that of males. However, the small difference between the two groups was not statistically significant at the 0.05 level with $t=-1.195$ and $df=80$ and $p=0.236$).

4.3.4.2 Knowledge and respondents' level of education (n=82)

Table 4.9 Respondents' knowledge according to level of education (n=82)

Education	Mean	N	SD	SE
Certificate	4.53	34	1.461	0.251
Degree	4.50	2	0.707	0.500
Diploma	4.26	43	1.217	0.186
Grade 12	7.00	3	1.000	0.577
Total	4.48	82	1.390	0.153

Table 4.9 shows that the respondents with Grade 12 had the highest level of knowledge of HIV/AIDS, followed by certificate holders, with diploma holders being the lowest. The difference between them was not statistically significant at the 0.05 level ($F=4.096$, $p=0.009$). The post hoc test (or multiple comparison procedure) to determine the difference from group to group could not be conducted because very few respondents were in the *degree* and *Grade 12* groups. Instead, correlation analysis was done between total knowledge and level of education in which Grade 12 was rated 1, certificate rated 2, diploma rated 3, and degree 5. A negative association was found with $r=-0.245$, ($p=0.026$), suggesting that an increase in the level of education was negatively associated with the level of factual knowledge of HIV/AIDS.

4.3.4.3 Knowledge and respondents' tribe (n=82)

Table 4.10 Respondents' knowledge according to tribe (n=82)

Tribe	Mean	n	SD	SE
Bemba	4.09	11	1.136	0.343
Chewa	4.16	19	1.344	0.308
Kunda	4.33	3	0.577	0.333
Lozi	4.00	1	0.000	0.000
Lunda	4.00	1	0.000	0.000
Ngoni	4.27	11	1.737	0.524
Nsenga	5.19	21	1.601	0.349
Tonga	4.50	6	1.049	0.428
Tumbuka	4.33	9	1.000	0.333
Total	4.48	82	1.390	0.153

Table 4.10 indicates that the Nsenga tribe had the highest level of knowledge, followed by Tonga tribe. The Lozi and Lunda tribes had the lowest level of knowledge. Nevertheless, the differences of mean factual knowledge of HIV/AIDS among the different tribes was not statistically significant at the 0.05 level with $F=0.998$, and $p=0.445$.

4.3.4.4 Knowledge and respondents' age (n=82)

Table 4.11 Respondents' knowledge according to age (n=82)

Age	Mean	n	SD	SE
21-30	4.54	28	1.232	0.233
31-40	4.20	35	1.491	0.252
41-50	4.80	15	1.424	0.368
51-60	5.25	4	1.258	0.629
Total	4.48	82	1.390	0.153

Table 4.11 shows that the respondents aged between 51-60 had the highest level of knowledge. The difference between the mean factual knowledge of HIV/AIDS among the different age groups was not statistically significant at the 0.05 level ($F=1.170$, $p=0.327$)

4.3.4.5 Respondents' marital status and factual knowledge (n=82)

Table 4.12 Respondents' factual knowledge according to marital status (n=82)

Marital status	Mean	n	SD	SE
Married	4.43	63	1.376	0.173
Single	4.50	16	1.461	0.365
Widowed	5.33	3	1.528	0.882
Total	4.48	82	1.390	0.153

Table 4.12 shows that the widowed respondents had the highest level of knowledge. Again, however, the difference between the mean factual knowledge of HIV/AIDS among the different married, singles and widowed respondents was not statistically significant at the 0.05 level ($F=0.604$, $p=0.549$).

4.4 SECTION C: ATTITUDE TOWARDS HIV/AIDS

Collins English Dictionary (1991:98) defines attitude as “the way a person views something or tends to behave towards it, often in an evaluative way”. Eight items measured the respondents’ attitudes towards HIV/AIDS (see table 4.7).

Table 4.13 Respondents’ attitudes towards HIV/AIDS (n=82)

Item	Disagree		Unsure		Agree		Total	
	n	%	n	%	n	%	n	%
1. In my opinion, more time should be spent teaching future teachers about HIV/AIDS in college	5	6,11	2	2,4	75	91,5	82	100,0
2. There is no need to be worried about having a student with HIV/AIDS in my classroom	33	40,3	0	0,0	49	59,7	82	100,0
3. I would avoid having a student with HIV/AIDS if at all possible in my classroom	72	87,8	4	4,9	6	7,3	82	100,0
4. I would be comfortable talking to others about how to protect themselves against HIV/AIDS	5	6,1	0	0,0	77	93,9	82	100,0
5. I would avoid working with someone who has AIDS if at all possible	77	88,3	0	0,0	8	11,7	82	100,0
6. In my opinion, all parents of students in the class should be notified if there is a student with HIV/AIDS	68	82,9	3	3,7	11	13,4	82	100,0
7. There is no need to test all children before entering school	31	37,8	6	7,3	45	54,8	82	100,0
8. I see no reason to be embarrassed by answering students’ questions about HIV/AIDS	9	10,9	4	4,9	69	84,2	82	100,0

Of the respondents, 91,5% (n=75) agreed more time should be spent teaching teachers in college about HIV/AIDS; 59,7% (n=49) thought that there was no need be worried about having a student with HIV/AIDS in the classroom; 87,8% (n=72) disagreed that they would avoid having a student with HIV/AIDS in their classroom; 93,9% (n=77) agreed to be comfortable to talk to others about HIV/AIDS; 88,3% (n=74) disagreed that they would avoid working with someone who had HIV/AIDS; 82,9% (n=68) disagreed with the need to notify parents of students with HIV/AIDS; 54,8% (n=45) thought that there was no need to test all children before entering school; and 84,2% (n=69) did not find it embarrassing to answer students’ questions about HIV/AIDS.

4.4.1 Analysis of respondents' attitudes using demographic details

Eight items measured the respondents' attitudes towards HIV/AIDS. For the sake of analysis, "strongly agree" and "agree" were grouped as "agree", while "strongly disagree" and "disagree" were grouped as "disagree". Their total scores measured the respondents' attitudes towards HIV/AIDS. It should be noted that items 1 and 8 looked at HIV/AIDS and education and the others looked at HIV/AIDS in relation to stigma and discrimination.

The following sections present the relationship between total score on *attitude* and the respondents' demographic characteristics, then stigma.

4.4.1.1 Respondents' demographic details and attitudes towards HIV/AIDS

4.4.1.1.1 Respondents' gender and attitudes towards HIV/AIDS (n=82)

Table 4.14 Respondents' attitudes according to gender (n=82)

Gender	Mean	n	SD	SE
Female	9.56	41	1.950	0.305
Male	8.85	41	2.007	0.313
Total	9.21	82	1.998	0.221

Table 4.14 shows a better attitude towards HIV/AIDS among the females. The difference between the mean of scores among males and females was not statistically significant at the 0.05 level ($t=-1.618$, $df=80$, $p=0.109$).

4.4.1.1.2 Respondents' educational level and attitudes towards HIV/AIDS (n=82)

Table 4.15 Respondents' attitude according to level of education (n=82)

Education	Mean	n	SD	SE
Certificate	9.76	34	2.090	0.358
Degree	10.00	2	2.828	2.000
Diploma	8.81	43	1.842	0.281
Grade 12	8.00	3	1.732	1.000
Total	9.21	82	1.998	0.221

Table 4.15 shows a better attitude towards HIV/AIDS among the degree holders. The difference between the mean of scores among the different education levels was not statistically significant at the 0.05 level ($F=1.976$, $p=0.124$)

4.4.1.1.3 Respondents' marital status and attitude towards HIV/AIDS (n=82)

Table 4.16 Respondents' attitude according to marital status (n=82)

Marital status	Mean	n	SD	SE
Married	9.29	63	1.979	0.249
Single	9.06	16	1.948	0.487
Widowed	8.33	3	3.215	1.856
Total	9.21	82	1.998	0.221

The difference between the mean of scores of the males and females was not statistically significant at the 0.05 level ($F=0.372$, $p=0.691$)

4.4.1.1.4 Respondents' age and attitude towards HIV/AIDS (n=82)

Table 4.17 Respondents' attitude according to age (n=82)

Age	Mean	n	SD	SE
21-30	9.46	28	2.186	0.413
31-40	9.49	35	1.597	0.270
41-50	8.60	15	2.131	0.550
51-60	7.25	4	2.500	1.250
Total	9.21	82	1.998	0.221

The age group between 31-40 had a better attitude towards HIV/AIDS. The difference between the mean of scores among the different age groups was not statistically significant at the 0.05 level ($F=2.217$, $p=0.093$)

4.4.1.1.5 Respondents' tribe and attitude towards HIV/AIDS (n=82)

Table 4.18 Respondents' attitude according to tribe (n=82)

Tribe	Mean	n	SD	SE
Bemba	10.18	11	2.401	0.724
Chewa	9.89	19	1.197	0.275
Kunda	8.67	3	2.517	1.453
Lozi	11.00	1	0.000	0.000
Lunda	12.00	1	0.000	0.000
Ngoni	8.45	11	2.464	0.743
Nsenga	8.14	21	2.056	0.449
Tonga	8.67	6	1.033	0.422
Tumbuka	10.00	9	1.000	0.333
Total	9.21	82	1.998	0.221

The Lundas had a better attitude towards HIV/AIDS. However, the difference between the mean of scores among the different tribes was not statistically significant at the 0.05 level ($F=2.463$, $p=0.020$)

4.4.1.2 Respondents' demographic details and stigma and discrimination

4.4.1.2.1 Respondents' gender and stigma (n=82)

Table 4.19 Respondents' gender and stigma (n=82)

Gender	Mean	n	Std deviation	Std error of mean
Female	15.56	41	2.540	0.397
Male	15.20	41	2.638	0.412
Total	15.38	82	2.580	0.285

The difference between the two groups was not statistically significant ($F=0.409$, $p=0.524$).

4.4.1.2.2 Respondents' education and stigma (n=82)

Table 4.20 Respondents' educational level and stigma (n=82)

Education	Mean	n	Std deviation	Std error of mean
Grade 12	17.67	3	1.528	0.882
Certificate	15.47	34	2.489	0.427
Diploma	15.14	43	2.722	0.415
Degree	15.50	2	0.707	0.500
Total	15.38	82	2.580	0.285

The respondents with Grade 12 had a better attitude towards stigma ($F=0.923$ $p=0.434$). But the difference was not statistically significant.

4.4.1.2.3 Respondents' marital status and stigma attitude (n=82)

Table 4.21 Respondents' marital status and stigma (n=82)

Marital status	Mean	n	Std deviation	Std error of mean
Married	15.33	63	2.634	0.332
Single	15.88	16	2.187	0.547
Widowed	13.67	3	3.512	2.028
Total	15.38	82	2.580	0.285

The difference between the various groups was not statistically significant ($F=0.965$ $p=0.385$).

4.4.1.2.4 Respondents' age and stigma attitude (n=82)

Table 4.22 Respondents' age and stigma (n=82)

Age	Mean	n	Std deviation	Std error of mean
21-30	15.82	28	2.420	0.457
31-40	15.31	35	2.553	0.431
41-50	14.60	15	2.613	0.675
51-60	15.75	4	4.031	2.016
Total	15.38	82	2.580	0.285

The difference was not statistically significant among the different age groups ($F=0.758$ $p=0.52$).

4.4.1.2.5 Respondents' tribe and stigma attitude ($n=82$)

Table 4.23 Respondents' tribe and stigma ($n=82$)

Tribe	Mean	n	Std deviation	Std error of mean
Bemba	15.09	11	2.737	0.825
Chewa	15.21	19	2.955	0.678
Kunda	15.67	3	1.528	0.882
Lozi	18.00	1	0.000	0.000
Lunda	15.00	1	0.000	0.000
Ngoni	15.55	11	2.734	0.824
Nsenga	15.62	21	2.418	0.528
Tonga	15.67	6	3.327	1.358
Tumbuka	14.78	9	2.279	0.760
Total	15.38	82	2.580	0.285

The difference was not statistically significant among the different tribal groups ($F=0.243$ $p=0.981$).

4.5 SECTION D: PREVENTIVE PRACTICES AGAINST HIV/AIDS

Collins English Dictionary (1991:1231) defines prevention as “the act of preventing” and preventive as “tending or intended to prevent or hinder; (med.) tending to prevent disease; prophylactic”. Nine items, covering means of personal protection against HIV/AIDS, measured the respondents' preventive practices (see table 4.24).

Table 4.24 Respondents' preventive practices

	Disagree		Agree		Unsure		Total	
	n	%	n	%	n	%	n	%
1. I abstain from sex outside marriage in order to prevent HIV/AIDS	8	9,70	2	2,40	72	87,8	82	100,0
2. I stick to one sexual partner in order to prevent HIV/AIDS	5	6,09	2	2,40	75	91,46	82	100,0
3. I always use a condom for all penetrative sexual intercourse outside marriage	15	18,29	56	68,29	11	13,41	82	100,0
4. Each time I have a suspected STI, I ensure timely screening and treatment	7	8,50	70	85,36	5	6,09	82	100,0
5. I am sober each time I have sex outside marriage	33	40,29	38	46,34	11	13,41	82	100,0
6. I masturbate to release sexual pressure if I am not with my wife/husband in order to prevent HIV/AIDS	36	43,90	37	45,12	9	10,97	82	100,0
7. I avoid dry sex in order to prevent HIV/AIDS	17	20,73	52	63,41	13	15,85	82	100,0
8. I delayed my first sexual intercourse until I got married in order to prevent HIV/AIDS	18	21,95	58	70,73	6	7,3	82	100,0
9. I use adequate quantities of water lubricant for both vaginal and anal sex	35	42,68	23	28,04	22	26,82	82	100,0

Of the respondents, 87,8% (n=72) abstained from sex outside marriage to prevent HIV/AIDS; 91,46% (n=75) stuck to one sexual partner; 13,41 % (n=11) used a condom outside marriage; 85,36% (n=70) sought screening and treatment each time they had an STI; 46,34% (n=38) were sober each time they had sex outside marriage; 45,12% (n=37) masturbated to release sexual pressure; 63,41% (n=52) avoided dry sex; 70,73% (n=58) delayed their first sexual intercourse until they were married; and 28,04% (n=23) used adequate lubricant and water to prevent HIV/AIDS.

4.5.1 Analysis of preventive practices according to demographic details

Nine items with response options measured preventive practices. For the sake of analysis, “strongly agree” and “agree” were grouped as “agree”, while “strongly disagree” and “disagree” were grouped as “disagree”. Preventive practices were grouped in three categories: abstinence, faithfulness, and use of condom and barrier methods.

4.5.1.1 Abstinence

4.5.1.1.1 Abstinence and respondents' gender (n=82)

Table 4.25 Abstinence according to gender (n=82)

Gender	Mean	n	SD	SE
Female	8.44	41	1.790	0.279
Male	7.85	41	2.116	0.330
Total	8.15	82	1.970	0.218

Table 4.25 shows that more females than males practised abstinence. With a t of -1.352 and a df of 80, however, the group difference between males and females was not statistically significant at the 0.05 level ($p=0.180$)

4.5.1.1.2 Abstinence and respondents' level of education (n=82)

Table 4.26 Abstinence according to level of education (n=82)

Education	Mean	n	SD	SE
Certificate	8.53	34	1.581	0.271
Degree	8.00	2	0.000	0.000
Diploma	7.77	43	2.266	0.346
Grade 12	9.33	3	0.577	0.333
Total	8.15	82	1.970	0.218

Table 4.26 indicates that the respondents with Grade 12 practised abstinence the most. The difference between the mean of scores among the different education levels was not statistically significant at the 0.05 level ($F=1.343$, $p=0.267$).

4.5.1.1.3 Abstinence and respondents' tribe (n=82)

Table 4.27 Abstinence according to tribe (n=82)

Tribe	Mean	n	SD	SE
Bemba	8.18	11	1.662	0.501
Chewa	8.00	19	2.108	0.484
Kunda	9.00	3	1.732	1.000
Lozi	8.00	1	0.000	0.000
Lunda	8.00	1	0.000	0.000
Ngoni	8.00	11	1.897	0.572
Nsenga	8.48	21	1.834	0.400
Tonga	8.50	6	2.739	1.118
Tumbuka	7.33	9	2.449	0.816
Total	8.15	82	1.970	0.218

From table 4.27, the Nsenga appeared to practise abstinence the most. Nevertheless, the difference between the mean of scores of the different tribes was not statistically significant at the 0.05 level ($F=0.358$, $p=0.939$).

4.5.1.1.4 Abstinence and respondents' age (n=82)

Table 4.28 Abstinence according to age (n=82)

Age	Mean	n	SD	SE
21-30	8.39	28	2.043	0.386
31-40	7.71	35	2.122	0.359
41-50	8.60	15	1.502	0.388
51-60	8.50	4	1.291	0.645
Total	8.15	82	1.970	0.218

Table 4.28 indicates that the respondents aged 41-50 practised abstinence the most effectively. The difference between the mean of scores of abstinence among the different age groups was not statistically significant at the 0.05 level ($F=1.016$, $p=0.390$).

4.5.1.1.5 Abstinence and respondents' marital status (n=82)

Table 4.29 Abstinence according to marital status (n=82)

Marital status	Mean	n	SD	SE
Married	8.24	63	1.890	0.238
Single	7.63	16	2.363	0.591
Widowed	9.00	3	1.000	0.577
Total	8.15	82	1.970	0.218

Table 4.29 indicates that the widowed respondents abstained. The difference between the scores of abstinence according to marital status was not statistically significant at the 0.05 level ($F=0.909$, $p=0.407$).

4.5.1.2 Faithfulness and demographic details

4.5.1.2.1 Faithfulness and respondents' gender (n=82)

Table 4.30 Faithfulness according to gender (n=82)

Gender	Mean	n	SD	SE
Female	7.49	41	1.675	0.262
Male	7.39	41	1.935	0.302
Total	7.44	82	1.799	0.199

Table 4.30 indicates no statistically significant difference between the gender scores for faithfulness at the 0.05 level ($t=-0.244$, $df=80$ and $p=0.808$).

4.5.1.2.2 Faithfulness and respondents' level of education (n=82)

Table 4.31 Faithfulness according to level of education (n=82)

Education	Mean	n	SD	Std. Error of Mean
Certificate	7.44	34	1.637	0.281
Degree	8.50	2	2.121	1.500
Diploma	7.28	43	1.931	0.295
Grade 12	9.00	3	1.000	0.577
Total	7.44	82	1.799	0.199

According to table 4.31, although the respondents with Grade 12 displayed the most faithfulness, no statistically significant difference was found at the 0.05 level ($F=1.102$, $p=0.353$).

4.5.1.2.3 Faithfulness and respondents' tribe (n=82)

Table 4.32 Faithfulness according to tribe (n=82)

Tribe	Mean	n	SD	SE
Bemba	6.91	11	1.700	0.513
Chewa	6.84	19	1.834	0.421
Kunda	8.67	3	1.528	0.882
Lozi	8.00	1	0.000	0.000
Lunda	7.00	1	0.000	0.000
Ngoni	8.36	11	1.804	0.544
Nsenga	7.48	21	1.806	0.394
Tonga	7.50	6	1.761	0.719
Tumbuka	7.67	9	1.936	0.645
Total	7.44	82	1.799	0.199

Table 4.32 indicates no statistically significant difference between scores according to tribe at the 0.05 level ($F=0.954$, $p=0.479$).

4.5.1.2.4 Faithfulness and respondents' age (n=82)

Table 4.33 Faithfulness according to age (n=82)

Age	Mean	n	SD	SE
21-30	7.82	28	1.765	0.334
31-40	7.03	35	1.839	0.311
41-50	7.40	15	1.765	0.456
51-60	8.50	4	1.291	0.645
Total	7.44	82	1.799	0.199

Table 4.33 indicates that the respondents aged 51-60 displayed the most faithfulness. Nevertheless, no statistically significant difference between the scores of the different age groups was found at the 0.05 level ($F=1.524$, $p=0.214$).

4.5.1.2.5 Faithfulness and respondents' marital status (n=82)

Table 4.34 Faithfulness according to marital status (n=82)

Marital status	Mean	n	SD	SE
Married	7.54	63	1.882	0.237
Single	7.00	16	1.414	0.354
Widowed	7.67	3	2.082	1.202
Total	7.44	82	1.799	0.199

Table 4.34 shows that no statistically significant difference between the scores of the married, single and widowed respondents was found at the 0.05 level ($F=0.593$, $p=0.555$).

4.5.1.3 Condom use and demographic details

4.5.1.3.1 Condom use, barrier methods and respondents' gender (n=82)

Table 4.35 Condom use, barrier methods according to gender (n=82)

Gender	Mean	n	SD	SE
Female	17.90	40	4.012	0.634
Male	17.15	40	4.470	0.707
Total	17.53	80	4.237	0.474

Table 4.35 indicates better condom use among the female respondents, but no statistically significant difference between the males and females at the 0.05 level ($t=-0.790$, $df=78$, and $p=0.432$).

4.5.1.3.2 Condom use, barrier methods and respondents' level of education (n=82)

Table 4.36 Condom use, barrier methods according to level of education (n=82)

Education	Mean	n	SD	SE
Certificate	17.53	34	3.808	0.653
Degree	22.50	2	3.536	2.500
Diploma	17.07	41	4.585	0.716
Grade 12	20.33	3	1.528	0.882
Total	17.53	80	4.237	0.474

According to table 4.36, the respondents with degrees used condoms the most, no statistically significant difference between the scores of the different education levels was found at the 0.05 level ($F=1.546$, $p=0.210$).

4.5.1.3.3 Condom use, barrier methods and respondents' tribe (n=82)

Table 4.37 Condom use, barrier methods according to tribe (n=82)

Tribe	Mean	n	SD	SE
Bemba	17.09	11	3.807	1.148
Chewa	17.84	19	4.086	0.937
Kunda	20.00	3	4.583	2.646
Lozi	18.00	1	0.000	0.000
Lunda	20.00	1	0.000	0.000
Ngoni	18.45	11	3.328	1.003
Nsenga	16.75	20	4.564	1.021
Tonga	20.67	6	2.422	0.989
Tumbuka	14.38	8	5.423	1.917
Total	17.53	80	4.237	0.474

Table 4.37 shows the best condom use for the Tonga, yet there was no statistically significant difference between the different tribes at the 0.05 level ($F=1.363$, $p=0.228$).

4.5.1.3.4 Condom use, barrier methods and respondents' age (n=82)

Table 4.38 Condom use, barrier methods according to age (n=82)

Age	Mean	n	SD	SE
21-30	17.44	27	4.117	0.792
31-40	17.41	34	4.054	0.695
41-50	18.27	15	5.298	1.368
51-60	16.25	4	2.986	1.493
Total	17.53	80	4.237	0.474

Table 4.38 shows that the respondents aged 41-50 had the highest rate of condom use. However, the difference between the scores of the different age groups was not statistically significant at the 0.05 level ($F=0.278$, $p=0.841$).

4.5.1.3.5 Condom use, barrier methods and respondents' marital status (n=82)

Table 4.39 Condom use, barrier methods according to marital status (n=82)

Marital status	Mean	n	SD	SE
Married	17.69	62	4.389	0.557
Single	17.07	15	3.770	0.973
Widowed	16.33	3	4.163	2.404
Total	17.53	80	4.237	0.474

Table 4.39 indicates the highest condom use among the married respondents, but no statistically significant difference at the 0.05 level ($F=0.251$, $p=0.779$).

4.6 CONCLUSION

This chapter discussed the data analysis and interpretation. The data analysis was done according to the respondents' demographic details and the results indicated in tables and diagrams.

Chapter 5 presents the findings and makes recommendations for practice and further research.

CHAPTER 5

Findings and recommendations

5.1 INTRODUCTION

This chapter discusses the findings and limitations of the study and makes recommendations for practice and further research.

5.2 RESEARCH OBJECTIVES

The study wished to

- describe the knowledge of the teachers in Petauke district about HIV/AIDS
- describe the teachers in Petauke district's attitudes towards HIV/AIDS
- describe the preventive measures that the teachers in Petauke district use against HIV/AIDS
- make recommendations to improve the knowledge, attitudes and HIV/AIDS preventive practices among teachers, and for future research

5.3 FINDINGS

5.3.1 Level of knowledge

The study found that the respondents' level of knowledge was satisfactory. Of the respondents, 98,7% (n=81) knew that HIV/AIDS is not a disease of Zambia only; 86,5% (n=71) knew what HIV stands for; 95,1% (n=77) knew that HIV does not strengthen the immune system, but only 42,6% (n=35) knew that HIV kills red cells.

These findings concurred with other research. Peltzer (2003:349-357) found that teachers in South Africa were well informed about HIV/AIDS. In Nigeria, Oschi et al (2005:31) found teachers' level of knowledge about HIV high. In 2005, a Zambian

sexual behaviour survey found that 96,6% of females and 96,9% of males had heard about HIV (Central Statistical Office 2005:13).

Furthermore, the respondents' total knowledge was analysed according to the demographic details. Although no statistical significant difference was found, the females had a slightly higher level of knowledge than the males. The respondents who had passed Grade 12 had a higher level of knowledge than other groups and an increase in educational level was associated with a decrease in knowledge.

5.3.2 Attitude towards HIV/AIDS

The study found the respondents' (teachers) attitude towards HIV/AIDS generally acceptable, possibly due to in-service teacher training on HIV/AIDS. However, their attitude needs to be improved. Of the respondents, 87,8% (n=72) would not avoid having a student with HIV/AIDS in their classroom; 88,35% (n=73) would not avoid working with someone who had HIV/AIDS; 93,9% (n=77) would be comfortable talking about HIV/AIDS. However, of the respondents, 37,8% (n=31) still thought that there is need to test all children before entering school and 40% feared having a student with HIV/AIDS in their classroom. These last two aspects contribute greatly to stigma and discrimination.

It should be noted that in Zambia, there is strong stigmatisation among the general population. Many Zambians want family members' HIV-positive status kept secret and a large proportion of Zambians maintain that people who are HIV positive should be ashamed of themselves.

5.3.3 Preventive practices

This study found that of the respondents, 87,8% (n=72) indicated that they abstained from sex outside marriage; 91,46% (n=70) said they stuck to one partner. There is a discrepancy between these findings and the reality on the ground. Chelala (2004:1) found that in Zambia two teachers die for every one who graduates from college. Teachers are frequently agents of forced sex. For example, in Zambia, at the time of this study, a teacher was in court in Serenje for raping a student (Zambia National Broadcasting Corporation 2007). Kinsman and Harrison (1999:598) found that in Malawi

and Uganda, teachers featured as agents of forced sex. The low level of condom use (13%) was puzzling.

A detailed analysis according to demographic details revealed no significant statistical difference among the respondents (eg, gender, age, tribe, marital status).

5.4 LIMITATIONS

This study was conducted in only one of the 72 districts in Zambia. Therefore, the findings cannot be generalised to the rest of the country.

5.5 RECOMMENDATIONS

Based on the findings of the study, the researcher makes the following recommendations for practice and further research.

5.5.1 To improve the knowledge, attitudes and HIV/AIDS preventive practices among teachers

Schools have a key role to play in promoting attitudes and values, and imparting knowledge and skills that will encourage students to behave in ways to minimise the risk of infection. However, the absence of a well-focused approach to HIV/AIDS at various schools and teachers' colleges has created a vacuum in HIV/AIDS and life skills education. The MOE should develop and introduce an HIV/AIDS programme to impact on behaviour change among teachers and pupils by using good quality learning materials on HIV/AIDS (SIAPAC 2004:5). All teachers should be given in-service training on HIV/AIDS.

Programmes aimed at developing HIV/AIDS knowledge as well as promoting responsible teacher behaviour to maximize protection from STI and HIV should be introduced. School-based programmes should contain consistent and coherent prevention messages. There is a need to encourage open communication amongst teachers, learners, the family and the broader community to clarify the myths and misconceptions about HIV/AIDS (SIAPAC 2004:5-8). This would help to reduce the stigma and discrimination associated with the disease.

The MOE should introduce programmes to involve teachers in HIV/AIDS activities, such as opening VCT centres in schools run by teachers.

5.5.2 Future research

The following topics are recommended for further research:

- A national survey on Zambian teachers' knowledge of and attitudes towards HIV/AIDS
- Exploring the negative correlation between level of education and HIV/AIDS knowledge
- An investigation into teachers as agents of forced sex
- The effects of stigmatisation and discrimination on HIV/AIDS patients
- The effects of stigmatisation and discrimination on the spread of HIV/AIDS

5.6 CONCLUSION

This study explored the teachers in Petauke district's level of knowledge of, attitudes towards and preventive practices against HIV/AIDS. The findings and recommendations should serve to improve teachers' and the community's knowledge, attitudes and preventive practices not only in Petauke district, but also in the entire country.

The MOE and all stakeholders should make every effort to mount an effective response to the impact of the HIV/AIDS. Much can be done at school level to influence behavioural change in the fight against HIV/AIDS as long as actions are backed by support from the existing structures.

BIBLIOGRAPHY

- Adler, MW. 2001. *ABC of AIDS*. 5th edition. London: Fish Books.
- Ajzen, I. 1991. The theory of planned behavior: organizational behavior. *Human Decision Processes* 50:179-211.
- Ballard, DJ, White, DM & Glascoff, MA. 1990. AIDS/HIV education for pre-service elementary teachers. *Journal of School Health* 60:262-265.
- Bartlett, JG & Finkheiner, AK. 2001. *The guide to people living with HIV infection*. 5th edition. Baltimore, MD: Johns Hopkins University.
- Babbie, ER & Mouton, J. 2001. *The practice of social research*. Cape Town: Oxford University Press.
- Beadle de Palamo, F. 2004. *Confronting the HIV/AIDS stigma*. Washington: Academy for educational development.
Available at:
<http://www.aids.org/HIV/AIDS/confronting-HIV-AIDs-stigma>, accessed on 15/10/2006.
- Blacker, J & Basia, Z. 1997. HIV prevalence and lifetime risk of dying of AIDS. *Health Transition Review* 20:45-62.
- Bowd, AD. 1987. Knowledge and opinions about AIDS among student teachers and experienced teachers. *Canadian Journal of Public Health* 78:84-87.
- Brink, H. 1987. *Statistics for nurses*. Pretoria: Academica.
- Brink, HI. 1996. *Fundamentals of research methodology for health care professionals*. 2nd edition. Cape Town: Juta.
- Brink, PJ & Wood, MJ. 1998. *Advanced design in nursing research*. Thousand Oaks: Sage.
- Brown, LK, Fritz, GK & Barone, VJ. 1989. The impact of AIDS education on junior and senior high school students. *Journal of Adolescent Health Care* 10:386-392.
- Burns, N & Grove, SK. 2001. *The practice of nursing research: conduct, critique and utilization*. 4th edition. Philadelphia: Saunders.
- Burns, N & Grove, SK. 2005. *The practice of nursing research conduct, critique and utilization*. 5th edition. St Louis: Saunders.
- Buseh, AG. 2004. Patterns of sexual behaviour among secondary school students in Swaziland, Southern Africa. *Culture, Health and Sexuality* 6(4):355-367.
- Campbell, B & Mbizvo, MT. 1994. Sexual behaviour and HIV knowledge among adolescent boys in Zimbabwe. *The Central African Journal of Medicine* 40(9):245-250.
- Cambridge Learner's Dictionary*. 2003. Cambridge: Cambridge University Press.

- Carolyn, H. 2003. *Women and HIV/AIDS. Workshop on HIV/AIDS and adult mortality in developing countries*. New York: United Nations Secretariat.
- Central Statistical Office. 1995. *Census of population housing and agriculture, 1990*. Lusaka: Central Statistical Office.
- Central Statistical Office. 1996a. *Gender statistics report, 1995*. Lusaka: Central Statistical Office.
- Central Statistical Office. 1996b. *Zambia demographic and health survey*. Lusaka: Central Statistical Office.
- Central Statistical Office. 1997. *Trends in demographic, family planning and health indicators in Zambia, 1980-1996*. Calverton, MD: Central Statistical Office.
- Central Statistical Office. 1999. *Zambia sexual behaviour survey, 1998*. Lusaka: Central Statistical Office.
- Central Statistical Office. 2001. *Census of population and housing, 2000*. Lusaka: Central Statistical Office.
- Central Statistical Office. 2003. *Demographic health survey, 2002*. Lusaka: Central Statistical Office.
- Central Statistical Office. 2004. *Zambia sexual behaviour survey 2003*. Lusaka: CSO .
- Central Statistical Office. 2005. *HIV/Aids epidemiological projections 1985-2010*. Lusaka: Central Statistical Office.
- Central Statistical Office. 2006. *Zambia sexual behaviour survey, 2005*. Lusaka: Central Statistical Office.
- Chandarana, PC, Conlon, P, NOH, S & Field, VA. 1990. The impact of AIDS education on elementary students. *Canadian Journal of Public Health* 81:285-289.
- Chatterjee, C, Bauer, C, Ram, R, Ohar, G, Sandhukukhan, S, & Dan, A. 2001. A study of awareness of Aids among school students and teachers of higher secondary schools in north Calcutta. *Indian Journal of Public Health* 45(1):27-30.
- Chelala, C. 2004. HIV/AIDS delivers a blow to third world education. *Times News*, 1 August 2004.
- Collins English Dictionary*. 1991. 3rd edition. Glasgow: HarperCollins.
- David, G & John, P. 2003. Heterosexual transmission of HIV in Africa: an empiric estimate. *International Journal of STD and AIDS* 14:162-173.
- De Vos, AS. 2001. *Research at grass roots for the social sciences and human service professions*. 2nd edition. Pretoria: Van Schaik.

Elzubier, AG, El Nour, MH & Ansari, EH. 1996. AIDS-related knowledge and misconceptions among high secondary school teachers and students in Kassala, Sudan. East Africa. *Medical Journal* 73(5):295-297.

Evian, C. 2005. *HIV/AIDS care*. Johannesburg: Jacana Media.

Family Health International. 2004. *HIV/AIDS care and treatment*. Arlington: Family Health International.

FAO. 2004. *HIV/AIDS, gender inequality and rural livelihoods: the impact of HIV/AIDS on rural livelihoods in Northern Province, Zambia*. Rome, Food and Agriculture Organization, Development Cooperation Ireland (DCI), Government of Zambia. Available at:

http://www.fao.org/sd/dim_pe1_040602_enhtm, accessed on 12/09/2006.

Flick, U. 1997. *The episodic interview. Small scale narratives as approach to relevant experiences*.

Available at:

<http://www.lse.ac.uk/collections/methodologyinstitute/pdf/qualpapers/Flick-episodic.pdf>, accessed on 21/07/2007.

Forster, S. 1993. *Cost and burden of AIDS on the Zambian health care system: policies to mitigate the impact on health services*. Lusaka: USAID.

Franzini, LR, Sideman, LM, Dexter, KE & Eldler, JP. 1990. Promoting AIDS risk reduction via behavioral training. *AIDS Education and Prevention* 2:313-321.

Fylkesnes, K, Sichone, P & Karael, M. 1998. *HIV epidemics and behaviours: evidence of favourable change in Lusaka, Zambia*. Paper presented at the 12th World AIDS Conference, Geneva.

Fylkesnes, K, Helge, B & Roland, M. 1994. *The current HIV/AIDS situation and future demographic impact*. Lusaka: Ministry of Health

Fylkesnes, K, Rosemary, M, Kelvin, K & Ndhlovu, Z. 1997. *Dynamics and determinants of the HIV epidemic : major Zambian epidemiological, demographic and behavioural observations*. Paper presented at the UNAIDS workshop on evidence of behavioural change in the context of HIV decline in Uganda, Nairobi, Kenya, February.

Garbus, L. 2003. *HIV/AIDS in Zambia*. California: AIDS policy Research Center.

Gisselquit D & Potterat, JJ. 2005. Heterosexual transmission of HIV in Africa an empiric estimate. *International Journal of STD and AIDS* 200(14):162-173.

Glanz, K, Rimer, BK & Lewis, IM. 2002. *Health behavior and health education: theory, research and practice*. 3rd edition. San Franscisco: Jossey-Bass Books.

Gopinath, MA. 2001. *Lectures on conceptual knowledge processing*.

Available at:

<http://www.wid.ed.uiuc.edu/index.php/conceptual-knowledge>, accessed on 21/07/2007.

Grant, KB, Gorgens, M & Kinghom, A. 2004. *Mitigating the impact of HIV on service providers study: what has been attempted, what is working, what has not worked, where and why Johannesburg, Mobile Task Team on the impact of HIV/AIDS on Education (MTT), University of KwaZulu-Natal.*

Available at:

<http://www.mttaids.com/site/awedep.asp?dealer=5562&depnum=8535>, accessed on 13/09/2006.

Grunsheit, A. 1997. *Impact of HIV and sexual health education on the sexual behaviour of young people. A review update.* UNAIDS: Geneva.

James-Traore, T, Finger, W, Ruland, C & Savariaud, S. 2006. *HIV/AIDS in Zambia, 2006.* Lusaka: Family health international.

Available at:

<http://www.medguide.org.zm/aids/aidzam28htm>, accessed on 21/07/2006.

Katzenellenbogen, JM, Joubert, G & Abdoul Karim, SS. 1997. *Epidemiology: a manual for South Africa.* Cape Town: Oxford University Press.

Kelly, MJ. 2000. *What HIV/AIDS can do to education and what education can do to HIV/AIDS.* Lusaka: University of Zambia.

Kerr, DI. 1990. Students need skills to prevent HIV infection. *Journal of School Health* 60:39.

Kinsman, J & Harrison, S. 1999. Implementation of a comprehensive AIDS education programme for schools. *AIDS Care* 11:591-601.

Lori, DL, Chunis, M, Smith, A, Carboni, J & Dawson, C. 2001. The role of academic discipline and gender in high school teachers' AIDS: related knowledge and attitudes. *Journal of School Health* 71:1-33.

Loewenson, R & Alan, W. 1997. *Social and economic issues of HIV/AIDS in Southern Africa: a review of current research.* Harare, Zimbabwe: Southern Africa AIDS Information Dissemination Service.

Mackay, V. 2003. *Best practices in HIV/AIDS prevention in the informal sector.* Geneva, International-regional tripartite meeting on best practices in workplace policies and programmes on HIV/AIDS. Geneva: International Labour Organisation (ILO).

Available at:

<http://www.ilo.org/public/english/protection/trav/aids/publ/informalecoprev.pdf>, accessed on 30/11/2006.

Magnusson, A. 2005. *HIV/AIDS and the workplace.* Stockholm: International Council of Swedish Industry.

Marais, H. 2005. *Buckling: the impact of AIDS in South Africa, 2005.* University of Pretoria: Centre for the Study of AIDS.

Available at:

<http://www.csa.za.org/article/articleastatic/7/1/2>, accessed on 14/11/2006.

Mathews, C, Kuhn, L, Metcalf, CA, Joubert, G & Cameron, N. 1990. Knowledge, attitudes and beliefs about AIDS in township high students. *South African Medical Journal* 78:511-516.

Mathews, C, Everett, K & Binedell, J. 1995. Learning to listen: formative research in the development of AIDS education for secondary school students *South African Medical Journal* 41:1715-1724.

Ministry of Education. 2000. *Recent developments in the fight against HIV/AIDS in Zambia*. Lusaka: Ministry of Education.

Ministry of Education. 2002a. *HIV/AIDS education component logical framework*. Lusaka: Ministry of Education.

Ministry of Education. 2002b. *HIV/AIDS education strategic plan*. Lusaka: Ministry of Education.

Ministry of Education. 2003. *HIV/AIDS guidelines for educators*. Lusaka: Ministry of Education.

Ministry of Education. 2005. *HIV/AIDS policy Implementation strategy for colleges of Education in Zambia*. Lusaka: Directorate of Teacher Education and Specialized Services.

Ministry of Health. 1999a. *Zambian sentinel surveillance: time and trends in the 1990s*. Lusaka: Ministry of Health.

Ministry of Health. 1999b. *HIV/AIDS in Zambia: background projections, impacts and interventions*. Lusaka: Ministry of Health.

Ministry of Health. 2005a. *Annual health statistical bulletin, 2005*. Lusaka: Ministry of Health.

Ministry of Health. 2005b. *National HIV/AIDS/STI/TB policy*. Lusaka: Ministry of Health.

Ministry of Health. 2005c. *National HIV/AIDS/STI/TB strategic plan*. Lusaka: Ministry of Health.

Ministry of Health. 2005d. *Zambia antenatal clinic sentinel surveillance report, 1994-2004*. Lusaka: Ministry of Health.

MOE – see Ministry of Education.

MOH – see Ministry of Health.

Mosby's Medical, Nursing and Allied Health Dictionary. 2002. 6th edition. St Louis: Mosby.

Mouton, J. 1996. *Understanding social research*. Pretoria: Van Schaik.

Mouton, J. 2001. *How to succeed in your Master's and Doctoral studies: a South African guide and resource book*. Pretoria: Van Schaik.

- Mukuka, L & Kalikiti, W. 1995. *The impact of HIV/AIDS on education in Zambia*. Lusaka: Ministry of Health.
- Neuman, DA & Gamble, SJ. 1995. Issues in the professional development of psychotherapists: counter transference and vicarious trauma in the new therapist. *Psychotherapy* 32:341-347.
- Neuman, WL. 2000. *Social research methods: qualitative and quantitative approaches*. 4th edition. Boston: Allyn & Bacon.
- Ngcamu, EA. 2006. Parental knowledge of HIV/AIDS in Gauteng Region 3. Unpublished Master's Dissertation. Pretoria: University of South Africa.
- Oschi, DC, Nakalema, S & Oschi, LL. 2005. Cultural and social aspects of HIV/AIDS sex education in secondary schools in Nigeria. *Journal of Biosocial Science* 37(2):175-183.
- Peltzer, K. 2003. HIV/AIDS education in South Africa: teachers' knowledge about HIV/AIDS and attitudes towards control of HIV/AIDS education. *Social behaviour and personality* 31(4):349-356.
- Petauke District Education Office. 2007. *Annual report, 2006*. Petauke: Petauke District Education Office.
- Piot, P. 2006. *The effects of AIDS on schools*. Geneva: UNAIDS.
Available at:
<http://www.avert.org/aids-schoolshtml>, accessed 15/10/2006.
- Polit, DF & Beck, CT. 2004. *Nursing research: principles and methods*. 7th edition. Philadelphia: Lippincott.
- Polit, DF, Beck, CT & Hungler, BP. 2001. *Essentials of nursing research: methods, appraisal and utilization*. Philadelphia: Lippincott.
- Polit, DF & Hungler, BP. 1999. *Nursing research: principles and methods*. 6th edition. Philadelphia: Lippincott.
- Richter, J. 1997. HIV/AIDS-related knowledge: instructional coherence. *Research Quarterly for Exercise* 68(1):48-50.
- Sandstrom-Holongren, A. 2005. *Refocusing the agenda for HIV prevention*. Sida Newsletter. 3 November.
- Schaalma, HP, Kok, G, Bosker, RJ, Parcel, GS, Peters, L, Poelman, J & Reinders, J. 1996. Planned development and evaluation of AIDS/STD for secondary school students in the Netherlands: short-term effects. *Health Education Quarterly* 23(4):469-487.
- SIAPAC – Social Impact Assessment and Policy Analysis Corporation.
- Sikazwe, AK. 2000. *Recent developments in the fight against HIV/AIDS in Zambia in the Ministry of education*. Lusaka: Ministry of Education.

- Social Impact Assessment and Policy Analysis Corporation. 2004. *Impact assessment of HIV/AIDS on the education sector in Zambia*. Lusaka: Ministry of Education.
- Stoneburner, R & Carballo, M. 1997. *An assessment of emerging patterns of HIV incidence in Uganda and other East African countries*: Final report of consultation for family health international, AIDS control and prevention project (AIDSCAP). Geneva: International Centre for Migration and Health.
- Sukwa, T, Kaona, F & Musonda, R. 1999. *Preliminary report on multicentre study on factors determining differential spread of HIV in African towns (Ndola site)*. Ndola: Tropical Diseases Research Centre.
- Tamukong, J. 2004. *The impact of HIV/AIDS on teachers and other education personnel in West and Central Africa: a synthesis of the literature from 2000 to 2004*. Yaounde: Rocare.
- UNAIDS. 2002. *A conceptual framework and basis for action: HIV/AIDS stigma and discrimination*. Geneva: UNAIDS.
- UNAIDS. 2004a. *AIDS epidemic update*. Geneva: UNAIDS.
- UNAIDS. 2004b. *HIV/AIDS statistics*. Geneva: UNAIDS.
- UNAIDS. 2004c. *HIV/AIDS stigma and discrimination*. Geneva: UNAIDS.
- UNAIDS. 2006a. *HIV-related stigma, discrimination and human rights violations*. Geneva: UNAIDS.
- UNAIDS. 2006b. *Report on the global AIDS epidemic: executive summary*. Geneva: UNAIDS.
- UNESCO. 2005. *HIV/AIDS and education sector*. Geneva: UNESCO.
- United Nations. 2005. *2005 World Summit Outcome*. New York: UN.
- US Center for Disease Control and Prevention. 2004a. *HIV/AIDS surveillance report*. Atlanta: Center for Disease Control and Prevention.
- US Center for Disease Control and Prevention. 2004b. *HIV/AIDS among African-Americans fact sheet*. Atlanta: Center for Disease Control and Prevention.
- US Center for Disease Control and Prevention. 2006. *A glance at HIV/AIDS among men who have sex with men*. Atlanta: Center for Disease Control and Prevention.
- WHO – see World Health Organization.
- World Bank. 2006. *Confronting AIDS: public priorities in a global epidemic*. New York: Oxford University Press.
- World Health Organization. 2006. *Antiretroviral therapy of HIV infection in infants and children in resource-limited settings: towards universal access*. Geneva: WHO.

- Willis, R. 2002. *The AIDS pandemic*. Lincolnshire: Stanborough Press.
- Winkler, G & Bodenstein, M. 2005. *Teaching about HIV and AIDS*. Oxford: MacMillan.
- Zambia National Broadcasting Corporation. 2006. *The news at nineteen hours*. 1 December.
- Zambia National Broadcasting Corporation. 2007. *The news at nineteen hours*. 11 August.
- Zambia National HIV/AIDS/STD/TB Council. 2001. *Zambia National HIV/AIDS strategic plan, 1999-2001*. Lusaka: ZNAC.
- Zambia National HIV/AIDS/STI/TB Council. 2003. *National HIV/AIDS/STI/TB intervention strategic plan*. Lusaka: ZNAC.
- Zambia National HIV/AIDS/STI/TB Council. 2004. *Joint review of the national HIV/AIDS/STI/TB intervention strategic plan (2002-2004)*. Lusaka: ZNAC.
- Zambia National HIV/AIDS/STI/TB and Leprosy Programme and the Southern Africa Department of the World Bank. 1999. *HIV/AIDS in Zambia: a policy maker's perspective*. Lusaka: ZNAC.
- Zambia National HIV/AIDS/STI/TB Sentinel Surveillance Team. 1999. *Zambian HIV sentinel surveillance: patterns and trends of the HIV epidemic*. Lusaka: Ministry of Health.

ANNEXURE A

The District Education Board Secretary
PETAUKE

3 May 2007

Nyanje Hospital
PIB I
SINDA

Dear Sir

RE: MY DISSERTATION

I hereby request permission from your office to carry out a survey among the teachers in Petauke District. This is part of the requirements in order for me to complete my studies with the University of South Africa.

My topic is "HIV/AIDS knowledge, attitudes and preventive practices among Primary and Secondary School Teachers in Petauke District".

Your consideration will be greatly appreciated.

Yours sincerely

DR MPOYI MULUMBA

ANNEXURE B

CONSENT FORM

HIV/AIDS: KNOWLEDGE, ATTITUDES AND PREVENTIVE PRACTICES AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN PETAUKE DISTRICT

Dear Mr/Miss/Mrs

I am Dr Mpoyi Mulumba working at Nyanje Hospital. I am currently conducting research on **HIV/AIDS: Knowledge, attitudes and preventive practices among primary and secondary school teachers in Petauke District**. This study is part of my master's degree at the University of South Africa (Unisa) and should benefit future generations in our country. You have been selected as a respondent to participate in this study. The information collected from you will be kept highly confidential. Participation is voluntary. Kindly tick (with a cross) if you are willing to participate. Do you want to participate?

YES ☐

NO ☐

Thank you.

DR MPOYI MULUMBA

All Communications to be addressed to
The DISTRICT EDUCATION BOARD SECRETARY,



In reply please quote
DEBS /PD/

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION

DISTRICT EDUCATION BOARD SECRETARY
P.O. BOX 560080
PETAUKE

22nd May, 2007

TO: ALL HEADTEACHERS
SECONDARY AND BASIC SCHOOLS
PETAUKE DISTRICT.

Dear Sir/ Madam,

Re: Dr. Mpoyi Mulumba

The above mentioned is a Medical Doctor at Nyanje Hospital and is currently undertaking a master of Public Health (MPH) programme with the University of South Africa.

As part of his MPH study, he is referred to undertake a research project. His topic is 'HIV/AIDS' knowledge, attitudes and preventive practices among primary and secondary school teachers in Petauke District. He is expected to collect information from your school under your supervision.

Kindly assist him in any possible way

Yours Faithfully,

T.J.V. NGOMA
DISTRICT EDUCATION STANDARDS OFFICER
For/ DISTRICT EDUCATION BOARD SECRETARY
PETAUKE.

ANNEXURE D

HIV/AIDS: KNOWLEDGE, ATTITUDES AND PREVENTIVE PRACTICES AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN PETAUKE DISTRICT

STUDY QUESTIONNAIRE

QUESTIONNAIRE #:

DATE OF SURVEY:

INTRODUCTION

I am Dr Mpoyi Mulumba from Nyanje Hospital in Petauke district. I am doing a survey on **HIV/AIDS: KNOWLEDGE, ATTITUDES AND PREVENTIVE PRACTICES AMONG PRIMARY AND SECONDARY SCHOOL TEACHERS IN PETAUKE DISTRICT.**

I need your help for that. Please answer the following questions filling in [x] in the appropriate blank or by filling in the information asked for.

ITEM A : DEMOGRAPHICS CHARACTERISTICS OF RESPONDENTS

Please tick using a cross [x] in the appropriate box

A(a) What is your gender?

Male	Female
1	2

A (b) Your highest educational

Qualification No education /primary school

Grade 12	Certificate	Diploma	Degree	Post Matric
0	1	2	3	4

A (c) . Which tribe are you?

Lozi	Tonga	Bemba	Ngoni	Luvale	Nsenga	Chewa	Other	specify
1	2	3	4	5	6			7

A (d) . How old are you?

Younger than 21	21-30 yrs	31-40yrs	41-50yrs	51-60yrs	Over 60 yrs
1	2	3	4	5	6

A (e) Your current marital status?

Single	Married	Staying together	Widowed	Diverted	Estranged
1	2	3	4	5	6

A (f) . What is the name of your school.

ITEMB: KNOWLEDGE LEVELS

a. Please indicate using a cross[x] whether the following statements are true or false. If you are not sure, fPlease indicate that you do not know.

Item. B(a). EPISODIC KNOWLEDGE	False	True	I do not know
1.HIV/AIDS is the disease for Zambia only			
2.HIV/AIDS is a disease of black people only			
3.Our young children (8-14) are not prone to HIV/AIDS yet			
4.HIV/AIDS was discovered in the early 1970's			
5.Zambia is the most HIV/AIDS affected country in the world			
Item B (b) CONCEPTUAL KNOWLEDGE			
6.HIV stands for Human immuno deficiency Virus (Conceptual)			
7.HIV strengthens the immune systems (Conceptual)			
8.HIV increases white blood cells (Conceptual)			
9.HIV is not the only cause of AIDS (Conceptual)			
10.HIV kills red blood cells			
Item B(c) DESCRIPTIVE KNOWLEDGE			
11.There is nothing one can do to change HIV/AIDS situation in the country (Descriptive)			
12.Our children(8-14yrs) are too young to indulge in sexual activities(Descriptive)			
13.The only warfare against HIV/AIDS is educating the younger generation before they indulge in sexual activities(Descriptive)			
14.The government's plan is for the future generation to be HIV free (Descriptive)			
15. We as a community do not have any control over the spread of HIV/AIDS.			

ITEM C : ATTITUDE TOWARDS HIV/AIDS

Please evaluate each statement by using the following keys:

1= SD (Strongly Disagree /SD)

2=D (Disagree (D)

3=UC/Undecided (U)

4=SA (Strongly agree (SA)

Place a cross[x] under the relevant answer.

1. In my opinion, more time should be spent teaching future teachers about HIV/AIDS in college

1	2	3	4	5
---	---	---	---	---

2. There is no need to be worried about having a student with HIV/AIDS in my classroom.

1	2	3	4	5
---	---	---	---	---

3. I would avoid having a student with HIV/AIDS if at all possible in my classroom.

1	2	3	4	5
---	---	---	---	---

4. I would be comfortable talking to others about how to protect themselves against HIV/AIDS.

1	2	3	4	5
---	---	---	---	---

5. I would avoid working with someone who has AIDS if at all possible

1	2	3	4	5
---	---	---	---	---

6. In my opinion, all parents of all students in the class should be notified if there is a student with HIV/AIDS in the class

1	2	3	4	5
---	---	---	---	---

7. There is no need to test all children for HIV before entering school

1	2	3	4	5
---	---	---	---	---

8. I see no reason to be embarrassed by answering students questions about HIV/AIDS

1	2	3	4	5
---	---	---	---	---

ITEM D : PREVENTION PRACTICES AGAINST HIV/AIDS

Please evaluate each statement by using the followings keys :

1=SD (Strongly Disagree (SD))

2=D (Disagree (D))

3=UD (Undecided (D))

4=A=Agree (A)

5= SA (Strongly Agree (SA))

Place a cross [X] under the relevant answer.

1. I abstain from sex outside marriage in order to prevent HIV/AIDS

1	2	3	4	5
---	---	---	---	---

2. I stick to one sexual partner in order to prevent HIV/AIDS

1	2	3	4	5
---	---	---	---	---

3. I always use a condom for all penetrative sexual intercourse outside marriage

1	2	3	4	5
---	---	---	---	---

4. Each time I have a suspected STI(Sexually transmitted infection) ,I ensure timely screening and treatment.

1	2	3	4	5
---	---	---	---	---

5. I am sober each time I have sex outside marriage.

1	2	3	4	5
---	---	---	---	---

6. I do masturbate to release sexual pressure if I am not with my wife/husband in order to prevent HIV/AIDS

1	2	3	4	5
---	---	---	---	---

7. I avoid dry sex in order to prevent HIV/AIDS

1	2	3	4	5
---	---	---	---	---

8. I delayed my first sexual intercourse until I got married in order to prevent HIV/AIDS

1	2	3	4	5
---	---	---	---	---

9. I use adequate quantities of water based lubricants for both vaginal and anal intercourse in order to prevent HIV/AIDS

1	2	3	4	5
---	---	---	---	---