

Investigate the Factors Contributing to the Spread of HIV/AIDS Among the Youths of Kazimolwa Ward, Mbala District, Zambia.

(Conference ID: CFP/589/2018)

Author: Reggie Kamupila

kamupila1971@gmail.com

Student: Department of Social Research,
Information and Communications University and Zambia
Research and Development Center,
Lusaka, Zambia
Supervisor: Professor JF Bwalya

ABSTRACT

Many people today are exposed to the risk of being victims of HIV/AIDS- trend that is gaining momentum as year's progress. Previous studies have reported that many people between the ages of (15-24 years) form a significant segment of those whose HIV/AIDS figure is rising. It is in this view that the study examined the factors contributing to the spread of HIV/AIDS among the youths of Kazimolwa Ward in Mbala District. The literature review showed that factors that contribute to the spread of HIV/AIDS among the youths in Kazimolwa Ward in Mbala District of Northern Province were inadequate sexual information, limited access to health care, social and economic factors and sexual health attitudes and behaviour. This study adopted a research survey design. A total of 100 respondents were selected using the probability sampling methods who were interviewed. The data collection instrument was a questionnaire that was self-administered with the help of the research assistants. The collected data was then analysed by SPSS and presented by the use of tables. The study concluded that most people have adequate information on HIV/AIDS but their health seeking behaviour is wanting and that social economic factors contribute to the spread of HIV/AIDS among most of the youths in Kazimolwa Ward in Mbala. The study concluded that the people whose majority are youths should be provided with youth friendly services, awareness on the importance of adequate education and employment opportunities for the youth who are not taking care of themselves.

ACKNOWLEDGEMENT

I would like to first of all thank God for the various graces and protection accorded to me during the whole thesis research process

I wish to express my deepest appreciation to my supervisor Dr Mwene for his immense and guidance during my entire process of conducting research. I would also like to appreciate the support given to me by Kelvin Mwelwa my fellow student.

I take also this opportunity to acknowledge the contribution of Mr Jaineck Mwape for his support and also Mr Mutukwa Simenda who assisted in the editing and formatting my work to give it shape.

Thank you all.

ABBREVIATIONS AND ACRONYMS

AIDS	:	Acquired Immune Deficient Syndrome
ARV	:	Anti- Retroviral
HIV	:	Human Immunodeficiency virus
ZDHS	:	Zambia's Demographic Health Survey
NGOs	:	Non – Governmental Organizations
UNAIDS	:	United Nations Program on HIV /AIDS
STDs	:	Sexually Transmitted Diseases
VCT	:	Voluntary Counselling and Testing

TILTE AND ABSTRACT	i
ANOWLEDGEMENT	ii
ABBREVIATIONS	
TABLE CONTENTS	
LIST OF TABLES	
LIST OF FIGURES	
CHAPTER ONE	
INTRODUCTION	
1.1 over view	
1.2 back ground	
1.3 statement of the problem	
1.4 Research objectives	
1.5 Research question	
1.6 Purpose of the study	
1.7 Significance of the study	
1.8 Assumption of the study	
1.9 Scope of the study	
1.10 Limitation of the study	
1.11 Operation definition of significance terms	
1.12 Conceptual frame work	
1.13 Operation frame work	
CHAPTER TWO	
LITERATURE REVIEW	
2.1over view	
2.2 An overview of HIV/aids in Zambia	
2.3 Inadequate hi/aids information	
2.4 limited access to health care services	
2.5 sexual attitudes and behaviours	
2.6 cultural and social economic factors	

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

- 3.1 Overview
- 3.2 The research design
- 3.3 Target population
- 3.4 Sample size
- 3.5 Methods of data collection
- 3.6 Pilot study
- 3.7 Reliability and Validity
 - 3.71 Reliability
 - 3.72 Validity
- 3.8 Data analysis and presentation

CHAPTER FOUR

DATA ANALYSIS PRESENTATION AND INTERPRETATION

- 4.1 Overview
- 4.2 Questionnaire return rate
- 4.3 Demographic information
 - 4.3.1 Gender and respondents
 - 4.3.2 Age and respondents
- 4.4 Inadequate HIV/AIDS information
 - 4.4.1 Understanding the terms HIV/AIDS
 - 4.4.2 Modes of HIV Transmission
 - 4.4.3 Ways of Knowing that a person has HIV/AIDS
 - 4.4.4 Prevention of HIV/AIDS
 - 4.4.5 Ways of prolonging lives of people with HIV/AIDS
- 4.5 Limited access to Health care
 - 4.5.1 Youth attendance to health facility in the last six months
 - 4.5.2 Youths health seeking behaviour
- 4.6 Cultural and social economic factors
 - 4.6.1 Cultural practises and the spread on HIV/AIDS
 - 4.6.2 Effects of culture to promote the communication about HIV/AIDS
 - 4.6.3 Relationship between social economic resources and spread of HIV/AIDS
- 4.7 Sexual Health, Attitudes and Behaviour
 - 4.7.1 Multiple Sexual partners and the spread on HIV/AIDS
 - 4.7.2 Declaration of HIV/aids status by youths
 - 4.7.3 Treatment of Youths who are HIV/AIDS positive

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

- 5.1 Overview
- 5.2 Summaries of findings
- 5.3 Conclusion
- 5.4 Recommendations
- 5.5 Suggestions and further research
- 5.6 References
- 5.7 Appendices
- 5.8 Appendix i
- 5.9 Appendix ii
- 6.0 Questionnaire

LIST OF TABLES

- Table 3.1. Target population
- Table 3.2 Sample size
- Table 4.1 Gender of the youths
- Table 4.2 Ages of the Respondents
- Table 4.4 Understanding the term HIV/AIDS
- Table 4.5 Modes of HIV Transmission
- Table 4.6 How a person finds out if he/she has HIV/AIDS
- Table 4.7 Is HIV/ AIDS preventable
- Table 4.8 How to prolong lives of people with HIV/AIDS
- Table 4.9 Youth attendance to freely safely communicate about HIV/AIDS
- Table 4.13 Lack of social –economic resources among the youths increase the spread of HIV/AIDS
- Table 4.14 Multiple sexual partners increase chances of contracting Virus
- Table 4.15 Declaration of HIV status health facility in the last 6 months
- Table 4.10 Do the youths in this area seek medical attention?
- Table 4.11 Contribution of Cultural practices to the spread of HIV/AIDS
- Table 4.12 Does Culture prevent people?
- Table 4.16 Treatment of HIV/ AIDS

CHAPTER ONE

INTRODUCTION.

1.1 Overview

This chapter outlines the following: back ground, problem statement, purpose of the study; study objectives; research questions; scope of the study, significance of the study, assumptions; limitation of the study; and the operation definition and terms.

1.2 Background of the study

There are over a million adolescents between the ages of 10- and 19-years accounting for about 20 % of the population and more than 25% of these young people live in the developing nations (Mc Cully and Salter, 1995). Increasingly public health attention has turned to the sexual and reproductive needs for many adolescents, particularly in the developing world. Society for adolescent's study reports that as at December 2003, almost 38800 cases of new HIV had been reported in the adolescents and young adults of ages between 13 and 24 years in the United States of America (UNIAIDS). (Elsevier, 2003).

It is also estimated that 60% of the new HIV infection occur among adolescents with girls affected to a far greater extent than boy's world over (Glynn et al., 2001).

Africa accounts for only one tenth of the world's population but nine of ten new cases of HIV infection, 83% of all AIDS deaths are found within this continent where the disease is believed to have killed ten times more people than those killed in the world wars. According to Memfih (2005), 36.1 million people are living with HIV/AIDS and an overwhelming 95% of them are living in the developing nations. A few countries appear to be over the peak of the first wave, including Uganda, the eastern and southern and to a lesser extent, west and central African regions and the worst hit communities constitute of nomadic pastoralists where it seems the control of HIV/AIDS have run out of hand (Memfih, 2005).

The determining factors of HIV are rooted in poverty and gender inequality, and these create local situations of risk (Farmer, 1999). In addition, rural communities bear higher burden of the cost of HIV/AIDS as many urban dwellers and migrant return to their village of origin where they will fall ill and possibly die from there.

The first case of HIV in Zambia was registered in 1984 (Memfih2005). It soon became clear that Zambia was already experiencing a very serious HIV epidemic as a survey from the University Teaching Hospital in Lusaka in 1985 found HIV prevalence's of 8.7% among pregnant women, 18.4% among blood donors and 19% among hospital staff [108]. Retrospective analyses of serum from cerebral malaria patients in Ndola revealed a prevalence of 3% in 1982-83 (1 out of 39 patients) and 16% in 1986-87 (3 out of 19) UNAIDS (109).

Based on studies of the impact of HIV on adult mortality, Kumbutso Dzekedzeke et al. suggest that the HIV epidemic in Zambia was probably already big enough to significantly influence adult mortality in the late 1960s. This hypothesis is based on the finding that the natural mortality advantage of women disappeared already in the period 1969-1980, and the crossover of the mortality curves for men and women has gradually shifted to younger ages since then [farmer).

In the first decade after HIV was discovered, the HIV prevalence in Zambia was only estimated based on data from population subgroups like pregnant women, STI clinic patients and blood donors [111]. The first population-based survey with HIV testing was conducted in 1995, and it found HIV prevalence in the 15-39 years age group of 26.0% in Chelstone (urban), Lusaka, and 16.4% in rural Kapiri Mposhi. This prevalence's matched quite well with available ANC data from the same areas (23.9% and 12.5% respectively in 1994) [112]. This survey was followed-up in 1999 and 2003 in the same areas and revealed a declining prevalence among young people; from 6.9% to 3.2% among urban men aged 15-24, from 22.5% to 12.5% for young urban females, from 5.7% to 3.2% for young rural males and from 16.1% to 6.8% for rural females of the same age. As changes in prevalence among young adults can be used as a proxy of incidence changes in the same group, this is interpreted as a sign that the HIV epidemic in these selected communities in Zambia is declining [113]. The only national survey to include HIV testing to date was the DHS+ in 2001/2002 which found a prevalence of HIV of 15.6%; 10.8% in rural areas and 23.2% in urban areas [114].

At the start of the HIV epidemic in sub-Saharan Africa, including Zambia, higher educated groups were the hardest hit [5, 108, 115, and 116]. However, in the repeated population-based surveys the prevalence decline was clearest among young people with higher

education, especially in the urban area, whereas among respondents with little education there was no significant change [117].

The main mode of HIV transmission in Zambia is heterosexual intercourse [108] and mother to-child transmission. It is estimated that 30,000 new-borns are infected every year through vertical transmission [118].

The district developmental plan, mbala district 2010 to 2017, indicates that there is need in prevention new cases especially on the most vulnerable groups who are the youths who comprise 31% of the district population (District Aids coordination committee). Mbala central has two clinics and one General hospital which is the only referral centre for the entire district. All the three health facilities are offering VCT but only the general hospital offering ARVs at large scale .there limited youth friendly centres .The other challenge is lack of enough VCT rooms for offering testing activities as the one that is present at the general hospital does not offer good privacy hence most people are shaning the facility because of fear of being victimised due to lack of confidentiality.

1.3 Statement of the problem

According to UNAIDS, HIV and AIDS is the single most public health and development challenge facing Zambia today. According to ZDHS, 2008, Over 60% of HIV new infections are diagnosed among the children, adolescents and adults. The information also indicates that even young youth especially girls are mostly affected. This has resulted to low productivity and higher labour costs as the youths are said to comprise over 60% of the countries labour force. The situation is further aggravated by the low age at which the youths are having their first sexual experience and that they are not practising safer sex (ZDHS 2008) thus increasing their vulnerability. This therefore poses a great challenge for the realization of the millennium development goals by 2020 and the dream of making Zambia an industrialised country by 2030 with most affected being those areas that are not developed (ZDHS,2008).

Therefore, this called and reinforced the need for further investigation into the factors that contribute to the spread of HIV /AIDS IN mbala district.

SIGNIFICANCE OF THE STUDY

The finding of the research will benefit the government, Mbala District, non-governmental organizations such as world Vision and Households in a Catholic Charity Organization and where

appropriate for the youth organizations whose problem the research want to address, the private sector such as the business community and the church for designing, planning and implementing appropriate HIV/AIDS interventions among the youths and the people of Kazimolwa Ward in Mbala.. This information will contribute to the formation of various policies to reduce this problem amongst the youths of Kazimolwa ward in Mbala.

Other than the youths only, the findings of the research will benefit the other age groups by making them more conscious of the dangers and limitations inherent when a person contacts HIV/AIDS. Again, the research will generally add value to the body of knowledge and understanding of HIV/AIDS patterns in kazimolwa ward and may also eventually be beneficial to researchers who may want to research more on this area.

1.4 Research objectives

The Research was guided by the following objectives

1.4.1 General Objectives

To find and establish the factors those contribute to high prevalence of HIV/AIDS in Kazimolwa Ward in Mbala District.

1.4.2 Specific Objectives

1. To find out the knowledge levels on the spread of HIV/AIDS among the youths of Kazimolwa ward in Mbala.
2. To determine how limited access to health care services contributes to the spread of HIV/AIDS among the youths of Kazimolwa Ward in Mbala.
3. To find out how cultural and social economic factors contributes to the spread of HIV/AIDS among the youths of Kazimolwa Ward, in Mbala.
4. To find out how sexual health attitudes affects the spread of HIV/AIDS among the youth of Kazimolwa Ward in Mbala.

1.5 Research question

The study sought to answer the following questions

1. To instigate the factors influencing the spread of AIDS in Zambia, a case study of Kazimolwa ward in Mbala district
2. To what extent does inadequate HIV/AIDS information affect the spread of HIV/AIDS among the youths of Kazimolwa Ward in Mbala.
3. To find out how cultural and social economic factors contributes to the spread of HIV/AIDS among the youths of Kazimolwa Ward in Mbala.
4. To find out how sexual health attitudes and behaviour affects the spread of HIV/AIDS among the youths of Kazimolwa ward in Mbala

1.6 Purpose of the study

The purpose of the study was to investigate the factors that influence the spread of HIV/AIDS in Mbala.

1.8 Assumptions of the study.

The following assumptions regarding various outcomes of the study were made: that the sample size chosen was adequate to help in drawing valid conclusions; the respondents were to be truthful and honest when responding to questions on the research; all the respondents were to be reached and duly complete all the questions asked and the data collection instrument chosen was relevant and appropriate.

1.9 Scope of study

The study analysed the factors influencing the prevalence of HIV/ AIDS in Mbala.

1.10 Limitations of the study

The research covered mbala district both urban and per urban areas that needed a lot of travelling and it was feared that there was not enough time to covers all the respondents. This was overcome the use of the research assistants who administered the questionnaire. Secondly funding of the study was not adequate as this research was self-funded. The findings of the study were limited for mbala kazimolwa ward which is in the central business district and also peri urban district and therefore their generalization was not easy.

1.11 operational definitions of the significance terms

Adolescents: the period of physical and psychological development from the onset of puberty to maturity.

Community health workers: these are front line frontline public health worker who are trusted members of and /or have an unusually close understanding of the community served.

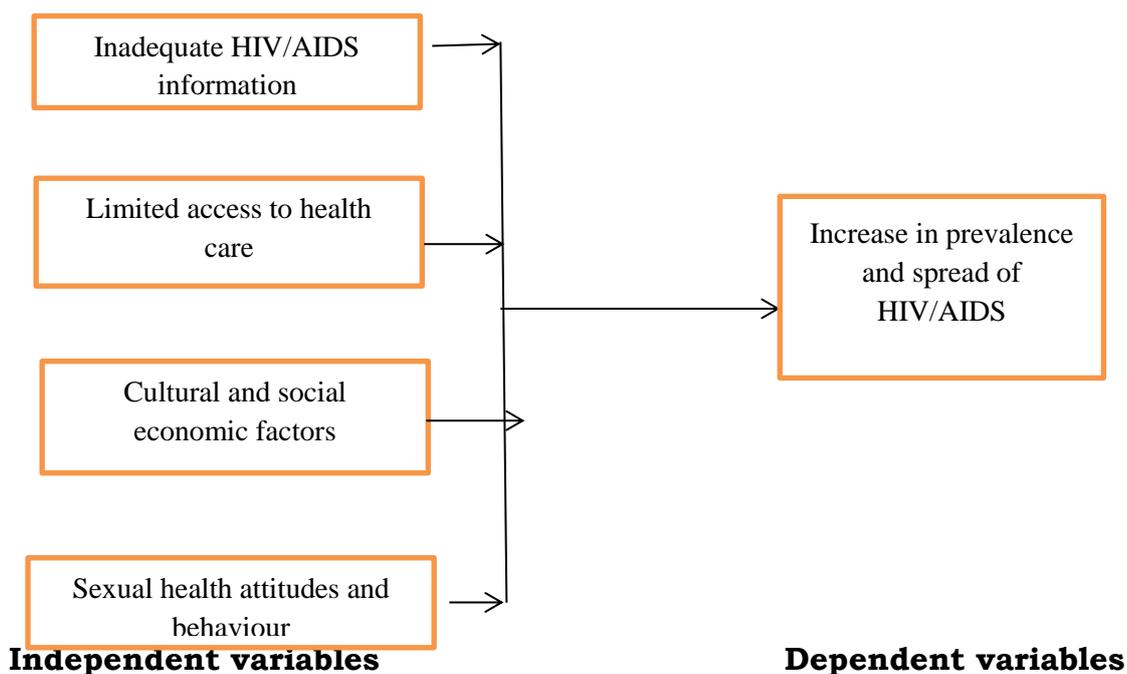
Infrastructure: the basic physical systems of a country or community's population including roads, utilities, water sewage etc.

Youth: these are individuals male or female, single or married aged between 15—35 years.

1.12 Conceptual Frame work

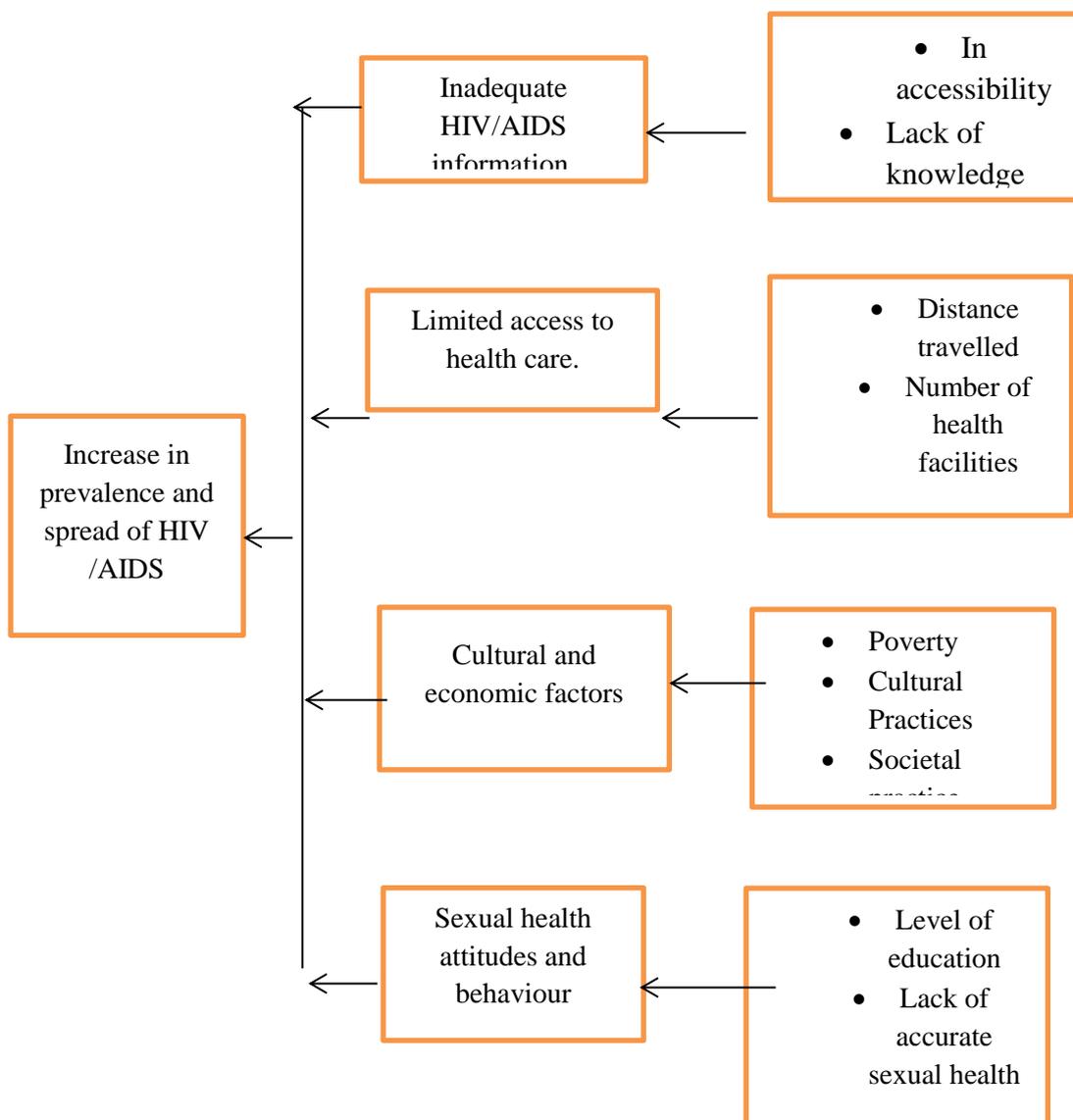
The major objective of the study was to establish the factors that influence the prevalence of HIV/AIDS in Mbala district. The research adopted the conceptual frame work illustrated below. The depended variable identified (Youths) were inadequate sexual health information, limited access to health care, cultural, social and economic factors, and sexual health attitudes and behaviour were studied to identify their significance to factors influencing the prevalence of HIV/AIDS in Mbala

Conceptual Frame work



1.13 Operational frame work

The operational frame work is where the general independent variables in the conceptual frame work are converted into specific measurable statistics .the dependent variables identified were inadequate sexual information, limited access to health care , cultural and social economic factors , and sexual health attitudes and behaviour were studied to identify their significance to factors influencing the prevalence of HIV /AIDS in Mbala which were then converted into measurable statistics as in the operational frame work below



CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter reviewed the literature on factors that influence the prevalence of hi/aids in mbala and it contains the review of the empirical literature on factors that influence the hi/aids prevalence in mbala

2.2 An overview of HIV/AIDS in Zambia

Zambia, despite high levels of awareness of the disease has one of the HIV/AIDS disease burdens in Africa (UNAIDS, 2009).The 2007 Zambia's aids indicator survey indicates that 7.4% of Zambians aged 15-64 are infected with HIV. This means that about 1.4 million adults are living with HIV. More women are infected with HIV (8.7%) compared to men (5.6%). The Zambia's health surveys shows that 7.8% of adult's age between 15-49 are infected with HIV compared to 6.7% to 6.7% 2005.

It has been suggested that in Sub Saharan Africa, sexual activity appears to be driven largely social –cultural beliefs and practises (cardwell ,Orubuloye ,1999), Cohen & Trussel ,1996; Gage and Njogu,1994 ; Anarfi,1993.this mostly true in rural areas where risk taking sexual behaviour may be tolerated in some context , while in others it may be strongly disapproved of and regarded as irresponsible or immoral. For example multiple sexual partners for men may be tolerated while women's infidelity is highly penalised, meaning that the aspects of sexual conduct are beyond women's control (Caldwell et al,1999)Fapohunda & Rutenberg ,1999,Ingham &Vanessa ,1997.Also risky behaviour can be viewed in the context of the number and types of partners ,sexual acts and orientation (Cohen & Trussel ,1996 : Dixon- Muller ,1996).Other elements of risky sexual Mueller ,1996 .other elements of risky sexual behaviour include early age at first sexual intercourse with at risk sexual partners and untreated sexually transmitted diseases (Akwara, 2003).

Risk taking behaviour in sub-Saharan Africa is associated with a number of factors including gender inequality that places women in subordinate positions, the belief that men have great sexual drives than women, and the notion that men cannot do without sex (Reid 1999.these beliefs act to promote the spread of sexually transmitted diseases, including HI/aids. The lack of power to

negotiate safer sex among women may be one of the critical obstacles to Aids prevention in Africa. Sexual behaviour may not be under the individual's volition but may be depended upon the social and cultural environment where one lives. The ability of an individual to be aware of, to initiate and to sustain safer sexual behaviours may be largely dependent upon societal sexual norms and practices and not just on self-- unless ARV drugs support testing. Also there is low coverage for VCT services that are supporting couples hence the need for health facilities to create quiet and confidential environments where the clients can be counselled on HIV testing and risk reduction seeking behaviour. Some of the community's especially rural areas allow multiple marriages through polygamy and therefore introducing a new dimension in the epidemiology of HIV/AIDS. Women get married when young to older men who tend to have more than one wife. Older men also die early hence the women are widowed early and due to poor education back ground and denial to own property, thy are left to struggle looking after their family hence the temptation to seek sexual liaisons with married or single men to easy economic pressure and satisfy their sexual needs (Nyamongo ,2000). For some rural areas long distance to the urban centres limit access to protective devices such as condoms. HIV /AIDS worsens due to pre-existing gender inequalities where married women suffer from inheritance patterns. economic subordination and the absence of restraints on the number of sexual partners a man may have, hence marriages cease to be a protective institution against HIV transmission. (Loewenson and Whiteside, (2001).

According to UNAIDS draft report, (2004), high levels of remarrying have also led to increase in transmission of HIV. Most of these communities do not believe in HIV/AIDS and those infected fear disclosing due to fear of stigma, discrimination and gender-based violence some people are still ignorant about HIV and methods of its prevention and control. This has been attributed to poor infrastructure, lack of well positioned VCT centres which take control of stigma.

2.3 Inadequate HIV/AIDS Information.

Further it states that the health system itself is partly responsible for the poor health outcomes evident in these populations, as they often face barriers to accessing care and treatment they need (Martin Spigelman),2002).These issues are particularly reluctant for many people including youth who face many challenges regarding access to youth friendly services which are isolated from the mainstream facilities .as a result many youth shy away from accessing health services especially when it is reproductive health related.

According to the ministry of health, many youths do not seek health care services and this has been attributed to lack of youth friendly facilities, ignorance by youths and their health, few medical personnel to handle youths and governments limited budgets to health matters. In sub-Saharan Africa, only half of the youth population has easy access to health care (UNAIDS).

2.5 Sexual Health attitudes and behaviours.

In Zambia, as in other regions of the world, a culture of silence surrounds most reproductive health issues, many people are not comfortable talking about sexuality with their children and others lack accurate sexual health knowledge. Many Zambians are also reluctant to provide sexually active adolescents with sex protective measures such as condoms and family planning tablets for female and this has contributed to increase in the disease.

One study also showed that adolescents with education were far more likely to experience casual sex and to use condoms for casual sex when compare to less educated youths.

2.6 Cultural and Social –economic factors

Some faith traditions in Africa teach that AIDS is a shameful disease and punishment for those that have been sexually promiscuous, and many adults are reluctant to admit to a disease that seems to imply promiscuity. Poverty and HIV are linked in a variety of ways. Poverty often leads to prostitution or trading in sexual favours for material goods. Young women may be especially vulnerable due to societal practices that deny them education and work opportunities. Poverty also leads to poor nutrition and weakened immune system, making poor people more susceptible to tuberculosis and STDs. The cost of providing treatment for people with AIDs drains resources from education, agriculture and other domains important to gross national product.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Overview

This chapter outlined the research design and methodology that was used for the purpose of gathering information in order to complete the study. It gave details on the locale of the research, research design, target population, the sample and the sampling procedures, data collection instruments and data analysis and presentation.

3.2 The research design

In this study survey research design was used. According to Mungenda and Mungenda (2003), survey report could be descriptive, exploratory or involving advanced statistical analysis. The research used descriptive survey. Descriptive research determines and reports the way things are and attempts to describe such things as possible behaviour attitudes, values and characteristics .Schinder and Coopers ,(2003) , say that descriptive studies serve a variety of research objectives including description of phenomena or characteristics associated with subject population, estimate of population that have similar characteristics associated and discovery of association among different variables of interest and an be used for profiling , defining, segmentation ,estimating, predicting and examining associate relationships. Descriptive research design was chosen in this study because the researcher aimed at identifying the factors that influenza the prevalence of HIV/AIDS in mbala District and also helped to describe the state of affairs of the problem under investigation and the relationship between variables.

3.3 Target population

The target population is defined as the members of the real or hypothetical set of people, events or objects the researcher wishes to generalize the results of the research (Borg and Gall, 1989). The target population included the adults and youths of mbala town where the research was conducted.

Table 3.1: Target population

Category	Number

Youths	100
Total	100

3.4 Sample size

Sampling is the process of selecting a number of individuals or objectives from the population such that the selected group contains elements representative of the characteristics found in the entire group (Mungenda and Mungenda, 2003). The study used probability sampling method to create a sampling frame. stratified sampling was used where different leadership levels of the group included in the survey. Stratified random sampling was suitable in this case because the population to be sampled was divided into homogeneous groups based on the two characteristics under consideration i.e. both youth and adults. A simple random sample of the total target group 50 youth and 50 adults was chosen from the population under study. The aim of the stratified sampling was to achieve an even representation of the subgroups of the population in the selected sample (Mungenda and Mungenda).

Table 3.2 Sample Size

Category	Number
Youths	100
Total	100

3.5 Methods of Data collection

The main instrument designed for the study was a self-designed questionnaire on factors influencing the prevalence of HIV/ AIDS in Mbala. Each of the questionnaires contained two parts. Part A obtained information on the personal data of the respondents while part B was designed to elicit responses on the respondents understanding on the issues relating to HIV/AIDS. The

questionnaires were preferred in this study because they allowed the researcher to reach the larger sample within a shorter time. Best and Khan (1993) noted that questionnaires enable the person administering them to explain the purpose of the study and the meaning of items that may not be clear. This method has larger coverings enabling the gathering of larger sample very inexpensively .it also anonymous. Anonymity helps to produce more candid answers than is possible in the interview

3.7 Reliability and Validity

3.7.1 Reliability

According to Mungenda and Mungenda, (2003), reliability is the measure of the degree to which a research instrument yields consistent results or data after repeated trials. Reliability is important because it enables the researcher to identify the ambiguities and inadequate items in the research instrument. To improve reliability of the instruments, the researcher conducted in one area in mbala which was not part of the actual study. Test retest technique of reliability testing was employed whereby the pilot questionnaire was administered twice to the respondents, with one wee interval, to allow for reliability testing. Then the sores were correlated using the Pearson's product moment Correlation formula to determine the reliability coefficient. A Correlation coefficient of 0.8 was obtained and therefore the research instruments were reliable in view that a correlation coefficient of 0.7 or higher is recommended (Mungenda and Mungenda, (1999).

3.7.2 Validity

Validity is defined as the accuracy and meaningful of inferences which are based on the research results, (Mungenda and Mungenda). After piloting the research instruments, the researcher estimated the degree of coherence of the responses for each instrument. The pilot study was also used to identify items in the questionnaire that were ambiguous or unclear to the respondents and where changed effectively, thereby improving validity of the research finding.t

3.8 Data analysis and presentation

The raw data collected was first pre-processed through editing of data to detect errors and omissions and correcting where possible, which involved careful scrutiny of the completed questionnaire to ensure that the data was accurate ,consistent with all facts gathered and uniformly entered. The

researcher then coded the data for efficiency in order to gather similar responses from the respondents. The data was classified on the basis of the common characteristics and attributes. After assembling the mass of raw data, the researcher tabulated it in form of statistical tables in order to allow for further analysis and summation of items as well as detection of errors and omissions.

The data was then analysed using both qualitative and quantitative procedures. For qualitative data, use of content analysis to identify patterns, themes and bias was applied. The data was then analysed with the use of frequency tables.

CHAPTER FOUR

DATA ANALYSIS, PRESENTTION AND INTERPRETTION

Overview

This chapter reports the major findings of the study which was collected using questionnaires. The questionnaires targeted 50 youths and 50 adults in Mbala. After the data was collected, it was analysed according to the questions as they appeared in the questionnaire and presented in the form of frequency distribution table. This has been used to present the scenario about factors that contribute to the prevalence of HIV/AIDS in Mbala District.

4.2 Questionnaires Return rate

The questionnaires return rate was 100% as the researcher was able to reach all 100 respondents who are targeted the high return rate was attained by the researcher with the help of two research assistants who helped in the administration of the questionnaires

4.3 Demographic information

This section will discuss the age of the respondents, gender respondents and the category of the respondent

4.3 .1 Gender and respondents

4.1 Gender respondents

Gender	Frequency	Percentage (%)	P.Value
Male	60	60	
Female	40	40	
Total	100	100%	

Table 4.1 indicates that 60 % of the total respondents were male while 40 % were female; this shows that both sexes were fairly represented.

4.3.2 Age of respondents

Table 4.2 Ages of respondents

Age	Frequency	percentage	P.value
15-20 years	55	55	
21-25 years	22	22	
25-30 years	15	15	
31 -35 years	8	8	
Total	100	100	

The analysis of th ages of the respondents showed that a higher percentage of the ages were between 15-20 years and between the ages of 21-25as indicated in table 4.2. this could be attributed to the fact that both of these ages represented are youths who are below 35 years of age and are also either in secondary school or post – secondary institution. And the researcher was able to reach them fairly easy compared to those who are between the age 25-30 and 31-35 who are out of school either working or job hunting and are hard to reach out to

4.4 Inadequate HIV/ AIDS Information

Table 4.3 information on HIV/AIDS

Gender	Frequency	Percentage (%)	P.Value
Yes	92	92	
No	8	8	
Total	100	100%	

In regard to the information on who have heard about HIV/AIDS as shown in table 4.3 above .92%indikated that they have heard about HIV/AIDS while a partly 8 % are not heard about it and these are those who are have not gone far in education. The majority said they got the information from the programs that were sponsored by government i.e. by ministry of health and other non-governmental organizations such as the world vision and the household in distress from the sisters of the sacred heart of Jesus.

4.4.1 Understanding the of terms HIV/AIDS

Table 4.4 Understanding of the term HIV/AIDS

Yes/ NO	Frequency	Percentage (%)	P.Value
Yes	70	70	
No	30	30	
Total	100	100%	

The analysis derived from the table 4.4 indicates that 70% of the respondents were able to correctly answer what HIV/AIDS stands for while 30% of the respondents did not.

4.4.2 Modes of HIV Transmission

Table 4.5 Modes of HIV transmission

Modes	Frequency	Percentage (%)
Sexual intercourse	60	60
Blood transfusion	20	20
Mother to child	14	14
Use of needle	6	6
Total	100	100

From the table 4.5 above, 60 % of the respondents indicate that HIV/AIDS is transmitted through sexual intercourse, 20% through blood transfusion while mother to child and use of needle caused 14% and 6% respectively. This could be explained by the fact that most of the messages on HIV/AIDS prevention highlights sexual intercourse as the major cause of HIV/AIDS and therefore most of the respondents were able to relate to those messages.

4.4.3 Ways of knowing that a person has HIV/ AIDS

4.6 How person finds out if he/she has HIV/ AIDS

Ways	Frequency	Percentage (%)
HIV Test	98	98
When one gets sick	2	2
Total	100	100%

Table 4.6 above shows that 98% of the respondents said that they can now if they are infected by HIV virus or not through taking HIV test while 2% indicated that they can only now if they have the HIV virus when they fall sick. The high rate of 98% for the first category can be attributed by the fact that awareness creation on HIV/AIDS mostly revolves around HIV test as the first step of understanding oneself in relation to HIV/AIDS.

4.4.4 Prevention of HIV/AIDS

Table 4.7 is preventable?

Yes /Know	Frequency	Percentage (%)
Yes	100	100
No	0	0
Total	100	100%

can prevent a person from contracting the virus .

4.4.5 Ways of prolonging lives with HIV/AIDS The analysis of the table 4.7 shows that 100% of the respondents indicated that HIV/AIDS is preventable .70 % of the respondents said that a person can prevent himself or herself through the use of condom ,25% said that one can prevent infection through remaining faithful while 5% indicated that abstinence

Table 4.8 How to prolong lives of people with HIV/AIDS

Ways	Frequency	Percentage (%)
ARVs	78	78
Eating Health food	10	10
Accepting that one is infected	8	8
Minimising stress	4	4
Total	100	100

Table 4.8 indicates that 78% of the respondents understand that the use of ARVS prolong life f those infected with HIV/AIDS. This is important because ARVS combined with health eating, accepting that one in infected with the virus and minimising stress is the best way of prolonging the life of those living with HIV/AIDS.

4.5 Limited access to health care

4.5.1 Youth attendance to health facility in the last 6 months

Table 4.9 youth attendance to health facility in the last 6 months

Yes /No	Frequency	Percentage (%)
Yes	30	30
No	70	70
Total	100	100%

Table 4.9 indicates that 30% of the youths have attended health facilities within the last six months while 80% have not. Those who attended the facility went because they suffered other ailments like malaria and typhoid. Reasons which were given by those who did not attend the health facility were lack of youth friendly facilities within their localities and some of them did not see the need to visit the health facility even for check-up while others claimed that they did not have money to cater for either fare to the health facility or for the charges being levied.

4.5.2 Youths Health seeing behaviour

Table 4.10 Do the youths in this area seek medical attention

Yes /No	Frequency	Percentage (%)
Yes	24	24
No	76	76
Total	100	100%

When asked if they seek medical attention when they fall sick, 24 % of the respondents said yes and while 76% said No as indicated by table 4.10. This reinforces the analysis of 4.9 which indicated that most of the youth did not attend the health facility in the last six months. Ignorance, lack of money and lack of youth friendly facilities were cited as some of the reasons why the youths don't seek medical attention. This has great impact in the health of the youth in relation to their understanding of their HIV/AIDS status because status can only be established through a test.

4.6 Cultural and social – Economic factors

4.6 Cultural practises and some spread of HIV/AIDS

Table 4.11. Contribution of cultural practices to the spread of HIV/AIDS

category	Frequency	Percentage (%)
Yes	60	60
No	40	40
Total	100	100%

From the table 4.11 50% of the respondents indicate that cultural practises increased the rate of HIV infection among the people. Circumcision, polygamy, wife inheritance and early marriages were some of the cultural practices which some respondents gave.

4.6.2 Effects of culture to promote communication about HIV/AIDS

Table 4.12 Does culture prevent people to freely communicate about HIV/ AIDS

Category	Frequency	Percentage (%)
Yes	88	88
No	12	12
Total	100	100%

Table 4.2 above indicates that 88% of the respondents believe that culture prevent members of the community from communicating freely about HIV/ AIDS. This is against 25% who do not believe this. This can be attributed to the fact that HIV/AIDS is a disease of sinners who are supposed to carry their own cross.

4.6.3 Relationship between social – economic resources and the spread of HIV/ AIDS

Table 4.13 Lack of social –economic resources among the youths increase the spread of HIV/AIDS

category	Frequency	Percentage (%)
Yes	93	93
No	7	7
Total	100	100%

93% of the respondents agreed that lack of education and income increase the chance the chance of the youths to contract HIV/AIDS while a partly 7% did not agree. The responds said that lack of education in particular reduces the understanding of how a person can prevent himself or herself from contracting the virus while lack of income pushes the youth and other people to behaviours like prostitution which increases the risk of contracting the disease and mostly women are the ones that are affected. Therefore, most of the youths suggested that women should be empowered to avoid this pit fall because women are the ones that are very much prone.

4.7 Sexual Health, attitudes and behaviour

The respondents were asked to comment on the sexual health, attitude of the youth in relation to HIV/AIDS

4.7.1 Multiple sexual partners and the spread of HIV virus

Table 4.14 multiple sexual partners increases chances of contracting HIV virus.

Category	Frequency	Percentage (%)
Yes	100	100
No	0	0
Total	100	100%

As indicated in the table 4.14 above, all the respondents agreed that multiple sexual partners increases the chance of the youths of contracting HIV irus.this was attributed to the fact that the many of the partners the lower the levels of faithfulness which results to spread of the virus. Many of the respondents agreed that there is need to have one faithful partner and if this is not possible, then one should use protection during the sexual intercourse.

4.7.2 Declaration of HIV/AIDS status by youths

Table 4.15 Declaration of HIV status

Category	Frequency	Percentage (%)
Yes	22	22
No	78	78
Total	100	100%

Table 4.15 indicates that 22% of the youths agreed that a youth who is HIV positive should declare his/her status while 78% did not agree. Those who agreed gave reasons that when a person declares his/her status it is possible to deal with situation easier than in the opposite. Also declaring one status helps a person to seek medical attention without fear. Fear of stigmatization, lack of employment and self-pity were reasons which make youths not to declare their HIV status

4.7.3 Treatment of people who are HIV/ AIDS Positive

Table 4.16 treatment of HIV /AIDS

comment	Frequency	Percentage (%)
With dignity and respect	35	35
Should not be stigmatised	55	55
Should be given opportunity to work	10	10%
Total	100	100

From the table 4.16 above 55% of the respondents indicated that youths who are HIV/AIDS positive should not be stigmatised, 35% indicated that they should not be treated with dignity and respect while 10% said that they should be given the opportunity to work whenever there is a general agreement that the youths who are HIV/AIDS positive should be made to feel that they belong to the community.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Over view

This chapter summarizes the research findings, discussions, conclusions drawn and the research recommendations to the government and stakeholders in the health sector.

4.2 Summary of findings

The research sought to find out if youths had adequate information regarding HIV/AIDS, 92% of the respondents indicated that they have heard about HIV/AIDS while 70% indicated that they understand what HIV/AIDS stands for. Also 98% of the respondents indicated that a person can establish his/her HIV status through test. Majority of (100%) indicated that HIV is preventable. Therefore, the youths have adequate information about HIV/AIDS.

The researcher further sought to find out if the researcher also sought to find out if limited access to health care contributes to the spread of HIV/AIDS among the adults and youth of Mbala. In the last six months, 30% have sought medical attention while 24% of the youths seek medical attention regularly and in Zambia given that most of the youths are infected when compared to other segments of the population. Other studies have established that, establishing a person's HIV status contributes greatly to the spread of the HIV virus.

Cultural and social economic factors contribute to the spread of HIV virus. 60% indicated that retrogressive cultural practices contribute to the spread of HIV/AIDS while 40% had a different opinion. Early marriages, inheritance and traditional circumcision were some of the traditional practices mentioned. 88% of the respondents also said that cultures prevent people from communicating about HIV/AIDS which will further complicate the issue.

Lack of social economic endowment like income and education cited as some of the factors which contribute to the spread of HIV among the most youths. 93% of the respondents agreed that lack of education and income increase the chance of youths to contract HIV/AIDS while 7% did not agree. There is a need of empowering the youths with education and employment opportunity for them to overcome this.

The researcher also endeavoured to establish if sexual health, attitudes and behaviour contribute to the spread of HIV/AIDS among the youth and the people of mbala. 100 % of the respondents agreed that having multiple sexual partners increases the chances of contracting the virus. This indicates that the youths understand the risks associated with the person having multiple sexual and probably she/he does not use protection during sexual intercourse. 22% of the youths agreed that infected youths should declare their status while 78% were of the contrary opinion. This was attributed to stigma and discriminations which a person might undergo if it goes public that they are infected with the disease. There was a general agreement that the youths who have HIV/AIDS should be treated fairly and equally. 35% said that they should be respected and accorded dignity. 10% of the respondents indicated that they should be given an opportunity to seek employment while 55% indicated that they should not be discriminated against. These will go a long way in helping these youths to carry on with their lives as usual and be productive.

5.3 Conclusions

the findings summarised above points to some conclusion which can be drawn from the analysis. It is clear from the findings that the youths have adequate information on HIV/AIDS. It was also noted that most of the youths do not seek medical attention which might limit establishing if the youths are HIV positive or not. Social economic and cultural factors could also be playing a role in contributing to the spread of HIV virus as many youths are not employed a factor which has led to risk behaviours like prostitution. Cultural practices like traditional circumcision and early marriages are cited as ways which have also contributed to the spread of the virus.

It was established that sexual health, attitudes and behaviour like having multiple partners is a factor which can contribute to the spread of HIV/AIDS. There was a general agreement that. One should have one sexual partner and if not, person should use protection during sexual intercourse

Most of the respondents felt that there was a need to accord the youths who are HIV/AIDS positive respect and dignity, that they should not be victimised and they should not be given an opportunity to earn a living.

5.4 RECOMMENDATIONS

Despite the fact that youths are aware of HIV/AIDS as established by this study, research in this field have established that youths represent the majority of those with HIV/AIDS. This is worrisome trend which needs to be addressed by government and stakeholders in the health sector. Some of the measures to be taken include the following.

REFERENCES

- [1] Zaba B, Slaymaker E, Urassa M, Boerma JT: **The role of behavioral data in HIV surveillance.** *AIDS* 2005, **19 Suppl 2**:S39-52.
- [2] UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance: **Guidelines for Second Generation HIV Surveillance for HIV: The Next Decade.** UNAIDS, WHO. 2000.
- [3] Celentano DD, Nelson KE, Lyles CM, Beyrer C, Eiumtrakul S, Go VF, Kuntolbutra S, Khamboonruang C: **Decreasing incidence of HIV and sexually transmitted diseases in young Thai men: evidence for success of the HIV/AIDS control and prevention program.** *AIDS* 1998, **12(5)**:F29-36.
- [4] Nelson KE, Celentano DD, Eiumtrakol S, Hoover DR, Beyrer C, Suprasert S, Kuntolbutra S, Khamboonruang C: **Changes in sexual behavior and a decline in HIV infection among young men in Thailand.** *N Engl J Med* 1996, **335(5)**:297-303.
- [5] Fylkesnes K, Musonda RM, Sichone M, Ndhlovu Z, Tembo F, Monze M: **Declining HIV prevalence and risk behaviours in Zambia: evidence from surveillance and population-based surveys.** *AIDS* 2001, **15(7)**:907-916.
- [6] Gregson S, Terceira N, Kakowa M, Mason PR, Anderson RM, Chandiwana SK, Carael M: **Study of bias in antenatal clinic HIV-1 surveillance data in a high contraceptive prevalence population in sub-Saharan Africa.** *AIDS* 2002, **16(4)**:643-652.
- [7] Kwesigabo G, Killewo JZ, Urassa W, Mbena E, Mhalu F, Lugalla JL, Godoy C, Biberfeld G, Emmelin M, Wall S, Sandstrom A: **Monitoring of HIV-1 infection prevalence and trends in the general population using pregnant women as a sentinel population: 9 years experience from the Kagera region of Tanzania.** *J Acquir Immune Defic Syndr* 2000, **23(5)**:410-417.
- [8] Michelo C, Sandøy IF, Fylkesnes K: **Antenatal clinic HIV data found to underestimate actual prevalence declines: Evidence from Zambia.** *Trop Med Int Health* 2008:in press.
- [9] Zaba B, Boerma T, White R: **Monitoring the AIDS epidemic using HIV prevalence data among young women attending antenatal clinics: prospects and problems.** *AIDS* 2000, **14(11)**:1633-1645.
- [10] Garnett GP, Garcia-Calleja JM, Rehle T, Gregson S: **Behavioural data as an adjunct to HIV surveillance data.** *Sex Transm Infect* 2006, **82 Suppl 1**:i57-62.
- [11] Central Board of Health: **Strategic Framework for the Expansion of the Prevention of Mother to Child Transmission of HIV/AIDS Services in Zambia.** 2003.
- [12] Hira SK, Kamanga J, Bhat GJ, Mwale C, Tembo G, Luo N, Perrine PL: **Perinatal transmission of HIV-I in Zambia.** *BMJ* 1989, **299(6710)**:1250-1252.
- [13] Ghys PD, Brown T, Grassly NC, Garnett G, Stanecki KA, and Stover J, Walker N: **The UNAIDS Estimation and Projection Package: a software package to estimate and project national HIV epidemics.** *Sex Transm Infect* 2004, **80 Suppl 1**:i5-9.

- [14] Diaz T, Loth G, Whitworth J, Sutherland D: **Surveillance methods to monitor the impact of HIV therapy programmes in resource-constrained countries.** *AIDS* 2005, **19 Supplement 2**:S31-S37.
- [15] Stover J: **Projecting the demographic consequences of adult HIV prevalence trends: the Spectrum Projection Package.** *Sex Transm Infect* 2004, **80 Suppl 1**:i1418.
- [16] Stover J, Ghys PD, Walker N: **Testing the accuracy of demographic estimates in countries with generalized epidemics.** *AIDS* 2004, **18 Suppl 2**:S67-73.
- [17] Boerma JT, Weir SS: **Integrating demographic and epidemiological approaches to research on HIV/AIDS: the proximate-determinants framework.** *J Infect Dis* 2005, **191 Suppl 1**:S61-67.
- [18] Lewis JJC, Donnelly CA, Mare P, Mupambireyi Z, Garnett GP, Gregson S: **Evaluating the proximate determinants framework for HIV infection in rural Zimbabwe.** *Sex Transm Infect* 2007, **83 Suppl 1**:69.
- [19] Grassly NC, Garnett GP, Schwartlander B, Gregson S, Anderson RM: **The effectiveness of HIV prevention and the epidemiological context.** *Bull World Health Organ* 2001, **79(12)**:1121-1132.
- [20] Pisani E, Garnett GP, Grassly NC, Brown T, Stover J, Hankins C, Walker N, Ghys PD: **Back to basics in HIV prevention: focus on exposure.** *BMJ* 2003, **326(7403)**:1384-1387.
- [21] Wegbreit J, Bertozzi S, DeMaria LM, Padian NS: **Effectiveness of HIV prevention strategies in resource-poor countries: tailoring the intervention to the context.** *AIDS* 2006, **20(9)**:1217-1235.
- [22] Fleming AF: **HIV and blood transfusion in sub-Saharan Africa.** *Transfus Sci* 1997, **18(2)**:167-179.
- [23] Kondro W: **Final Krever report paints picture of regulatory dysfunction.** *Lancet* 1997, **350(9092)**:1688.
- [24] Tapko JB, Sam O, Diarra-Nama AJ: **Status of blood safety in the WHO African region: Report of the 2004 survey.** Brazzaville: WHO. 2007.
- [25] Weinberg PD, Hounshell J, Sherman LA, Godwin J, Ali S, Tomori C, Bennett CL: **Legal, financial, and public health consequences of HIV contamination of blood and blood products in the 1980s and 1990s.** *Ann Intern Med* 2002, **136(4)**:312-319.
- [26] Gowing L, Farrell M, Bornemann R, Ali R: **Substitution treatment of injecting opioid users for prevention of HIV infection.** *Cochrane Database Syst Rev* 2004(4).
- [27] Kornør H: **Medikamentell behandling av opiatavhengighet.** Nasjonalt kunnskapssenter for helsetjenesten. 2006.
- [28] Wodak A, Cooney A: **Do needle syringe programs reduce HIV infection among injecting drug users: a comprehensive review of the international evidence.** *Subst Use Misuse* 2006, **41(6-7)**:777-813.
- [29] Amundsen EJ: **Measuring effectiveness of needle and syringe exchange programmes for prevention of HIV among injecting drug users.** *Addiction* 2006, **101(7)**:911-912.
- [30] Amundsen EJ: **Preventing HIV among intravenous drug users: Do we know what really works?** In *HIV Research Net conference.* Bergen, Norway; 2006.
- [31] Amundsen EJ: **Needle sharing: A reply to Wodak.** *Addiction* 2007, **102**:161-163.
- [32] Young TN, Arens FJ, Kennedy GE, Laurie JW, Rutherford G: **Antiretroviral postexposure prophylaxis (PEP) for occupational HIV exposure.** *Cochrane Database Syst Rev* 2007(1):CD002835.

- [33] Ross DA, Changalucha J, Obasi AI, Todd J, Plummer ML, Cleophas-Mazige B, Anemona A, Everett D, Weiss HA, Mabey DC, Grosskurth H, Hayes RJ: **Biological and behavioural impact of an adolescent sexual health intervention in Tanzania: a community-randomized trial.** *AIDS* 2007, **21**(14):1943-1955.
- [34] Klepp KI, Ndeki SS, Leshabari MT, Hannan PJ, Lyimo BA: **AIDS education in Tanzania: promoting risk reduction among primary school children.** *Am J Public Health* 1997, **87**(12):1931-1936.
- [35] Fawole IO, Asuzu MC, Oduntan SO, Brieger WR: **A school-based AIDS education programme for secondary school students in Nigeria: a review of effectiveness.** *Health Educ Res* 1999, **14**(5):675-683.
- [36] Kirby D, Obasi A, Laris BA: **The effectiveness of sex education and HIV education interventions in schools in developing countries.** *World Health Organ Tech Rep Ser* 2006, **938**:103-150; discussion 317-141.
- [37] Stanton BF, Li X, Kahihuata J, Fitzgerald AM, Neumbo S, Kanduuombe G, Ricardo IB, Galbraith JS, Terreri N, Guevara I, Shipena H, Strijdom J, Clemens R, Zimba RF: **Increased protected sex and abstinence among Namibian youth following a HIV risk-reduction intervention: a randomized, longitudinal study.** *AIDS* 1998, **12**(18):2473-2480.
- [38] Bertrand JT, O'Reilly K, Denison J, Anhang R, Sweat M: **Systematic review of the effectiveness of mass communication programs to change HIV/AIDS-related behaviors in developing countries.** *Health Educ Res* 2006, **21**(4):567-597.
- [39] Gordon G, Mwale V: **Preventing HIV with Young People: A Case Study from Zambia.** *Reprod Health Matters* 2006, **14**(28):68-79.
- [40] Underhill K, Montgomery P, Operario D: **Sexual abstinence only programmes to prevent HIV infection in high income countries: systematic review.** *BMJ* 2007, **335**(7613):248.
- [41] Underhill K, Operario D, Montgomery P: **Abstinence-only programs for HIV infection prevention in high-income countries.** *Cochrane Database Syst Rev* 2007(4).
- [42] O'Reilly K, Medley A, Dennison J, Sweat M: **Systematic review of the impact of abstinence-only programmes on risk behavior in developing countries (19902005).** In *AIDS 2006 - XVI International AIDS Conference*. Toronto; 2006.
- [43] Underhill K, Operario D, Montgomery P: **Systematic review of abstinence-plus HIV prevention programs in high-income countries.** *PLoS Med* 2007, **4**(9).
- [44] Neumann MS, Johnson WD, Semaan S, Flores SA, Peersman G, Hedges LV, Sogolow E: **Review and meta-analysis of HIV prevention intervention research for heterosexual adult populations in the United States.** *J Acquir Immune Defic Syndr* 2002, **30** Suppl 1:S106-117.
- [45] Mullen PD, Ramirez G, Strouse D, Hedges LV, Sogolow E: **Meta-analysis of the effects of behavioral HIV prevention interventions on the sexual risk behavior of sexually experienced adolescents in controlled studies in the United States.** *J Acquir Immune Defic Syndr* 2002, **30** Suppl 1:S94-S105.
- [46] Scott-Sheldon LAJ, Johnson BT: **Eroticizing creates safer sex: a research synthesis.** *J Prim Prev* 2006, **27**(6):619-640.

- [47] Johnson WD, Hedges LV, Ramirez G, Semaan S, Norman LR, Sogolow E, Sweat MD, Diaz RM: **HIV prevention research for men who have sex with men: a systematic review and meta-analysis.** *J Acquir Immune Defic Syndr* 2002, **30 Suppl 1**:S118-129.
- [48] Jemmott JB, Jemmott LS, Fong GT: **Abstinence and safer sex HIV risk-reduction interventions for African American adolescents: a randomized controlled trial.** *JAMA* 1998, **279**(19):1529-1536.
- [49] Pinkerton SD, Abramson PR: **Effectiveness of condoms in preventing HIV transmission.** *Soc Sci Med* 1997, **44**(9):1303-1312.
- [50] Bracher M, Santow G, Watkins SC: **Assessing the potential of condom use to prevent the spread of HIV: a microsimulation study.** *Stud Fam Plann* 2004, **35**(1):48-64.
- [51] Smoak ND, Scott-Sheldon LA, Johnson BT, Carey MP: **Sexual risk reduction interventions do not inadvertently increase the overall frequency of sexual behavior: a meta-analysis of 174 studies with 116,735 participants.** *J Acquir Immune Defic Syndr* 2006, **41**(3):374-384.
- [52] Agha S, Karlyn A, Meekers D: **The promotion of condom use in non-regular sexual partnerships in urban Mozambique.** *Health Policy Plan* 2001, **16**(2):144-151.
- [53] Hughes V, Stall RD, Klouri C, Barrett DC, Arevalo EI, Hearst N: **AIDS risk-taking behavior during carnival in Sao Paulo, Brazil.** *AIDS* 1995, **9 Suppl 1**:S39-44.
- [54] Minnis AM, Padian NS: **Effectiveness of female controlled barrier methods in preventing sexually transmitted infections and HIV: current evidence and future research directions.** *Sex Transm Infect* 2005, **81**(3):193-200.
- [55] Thomsen SC, Ombidi W, Toroitich-Ruto C, Wong EL, Tucker HO, Homan R, Kingola N, Luchters S: **A prospective study assessing the effects of introducing the female condom in a sex worker population in Mombasa, Kenya.** *Sex Transm Infect* 2006, **82**(5):397-402.
- [56] Korenromp EL, White RG, Orroth KK, Bakker R, Kamali A, Serwadda D, Gray RH, Grosskurth H, Habbema JD, Hayes RJ: **Determinants of the impact of sexually transmitted infection treatment on prevention of HIV infection: a synthesis of evidence from the Mwanza, Rakai, and Masaka intervention trials.** *J Infect Dis* 2005, **191 Suppl 1**:S168-178.
- [57] White RG, Orroth KK, Korenromp EL, Bakker R, Wambura M, Sewankambo NK, Gray RH, Kamali A, Whitworth JA, Grosskurth H, Habbema JD, Hayes RJ: **Can population differences explain the contrasting results of the Mwanza, Rakai, and Masaka HIV/sexually transmitted disease intervention trials?: A modeling study.** *J Acquir Immune Defic Syndr* 2004, **37**(4):1500-1513.
- [58] Grosskurth H, Gray R, Hayes R, Mabey D, Wawer M: **Control of sexually transmitted diseases for HIV-1 prevention: understanding the implications of the Mwanza and Rakai trials.** *Lancet* 2000, **355**(9219):1981-1987.
- [59] Grosskurth H, Mosha F, Todd J, Mwijarubi E, Klokke A, Senkoro K, Mayaud P, Changalucha J, Nicoll A, ka-Gina G, et al.: **Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania: randomised controlled trial.** *Lancet* 1995, **346**(8974):530-536.
- [60] Vickerman P, Terris-Prestholt F, Delany S, Kumaranayake L, Rees H, Watts C: **Are targeted HIV prevention activities cost-effective in high prevalence settings? Results from a sexually transmitted infection treatment project for sex workers in Johannesburg, South Africa.** *Sex Transm Dis* 2006, **33**(10 Suppl):S122-132.

- [61] Laga M, Alary M, Nzilambi N, Manoka AT, Tuliza M, Behets F, Goeman J, St Louis M, Piot P: **Condom promotion, sexually transmitted disease treatment, and declining incidence of HIV-1 infection in female Zairan sex workers.** *Lancet* 1994, **334**(8917):246-248.
- [62] Steen R, Vuylsteke B, DeCoito T, Ralepeli S, Fehler G, Conley J, Bruckers L, Dallabetta G, Ballard R: **Evidence of declining STD prevalence in a South African mining community following a core-group intervention.** *Sex Transm Dis* 2000, **27**(1):1-8.
- [63] Alary M, Mukenge-Tshibaka L, Bernier F, Geraldo N, Lowndes CM, Meda H, Gnintoungbe CAB, Anagonou S, Joly JR: **Decline in the prevalence of HIV and sexually transmitted diseases among female sex workers in Cotonou, Benin, 1993-1999.** *AIDS* 2002, **16**(3):463-470.
- [64] Kaul R, Kimani J, Nagelkerke NJ, Fonck K, Ngugi EN, Keli F, MacDonald KS, Maclean IW, Bwayo JJ, Temmerman M, Ronald AR, Moses S: **Monthly antibiotic chemoprophylaxis and incidence of sexually transmitted infections and HIV-1 infection in Kenyan sex workers: a randomized controlled trial.** *JAMA* 2004, **291**(21):2555-2562.
- [65] Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A: **Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial.** *PLoS Med* 2005, **2**(11):e298.
- [66] Bailey RC, Moses S, Parker CB, Agot K, Maclean I, Krieger JN, Williams CFM, Campbell RT, Ndinya-Achola JO: **Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial.** *Lancet* 2007, **369**(9562):643-656.
- [67] Gray RH, Kigozi G, Serwadda D, Makumbi F, Watya S, Nalugoda F, Kiwanuka N, Moulton LH, Chaudhary MA, Chen MZ, Sewankambo NK, Wabwire-Mangen F, Bacon MC, Williams CFM, Opendi P, Reynolds SJ, Laeyendecker O, Quinn TC, Wawer MJ: **Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial.** *Lancet* 2007, **369**(9562):657-666.
- [68] Turner G, Shepherd J: **A method in search of a theory: peer education and health promotion.** *Health Educ Res* 1999, **14**(2):235-247.
- [69] Smith MU, Dane FC, Archer ME, Devereaux RS, Katner HP: **Students together against negative decisions (STAND): evaluation of a school-based sexual risk reduction intervention in the rural south.** *AIDS Educ Prev* 2000, **12**(1):49-70.
- [70] Pearlman DN, Camberg L, Wallace LJ, Symons P, Finison L: **Tapping youth as agents for change: evaluation of a peer leadership HIV/AIDS intervention.** *J Adolesc Health* 2002, **31**(1):31-39.
- [71] Caron F, Godin G, Otis J, Lambert LD: **Evaluation of a theoretically based AIDS/STD peer education program on postponing sexual intercourse and on condom use among adolescents attending high school.** *Health Educ Res* 2004, **19**(2):185-197.
- [72] Mellanby AR, Rees JB, Tripp JH: **Peer-led and adult-led school health education: a critical review of available comparative research.** *Health Educ Res* 2000, **15**(5):533-545.
- [73] Milburn K: **A critical review of peer education with young people with special reference to sexual health.** *Health Educ Res* 1995, **10**(4):407-420.
- [74] Walden VM, Mwangulube K, Makhumula-Nkhoma P: **Measuring the impact of a behaviour change intervention for commercial sex workers and their potential clients in Malawi.** *Health Educ Res* 1999, **14**(4):545-554.

- [75] Basu I, Jana S, Rotheram-Borus MJ, Swendeman D, Lee SJ, Newman P, Weiss R: **HIV prevention among sex workers in India.** *J Acquir Immune Defic Syndr* 2004, **36**(3):845-852.
- [76] Ghys PD, Diallo MO, Ettiegne-Traore V, Kale K, Tawil O, Carael M, Traore M, MahBi G, De Cock KM, Wiktor SZ, Laga M, Greenberg AE: **Increase in condom use and decline in HIV and sexually transmitted diseases among female sex workers in Abidjan, Cote d'Ivoire, 1991-1998.** *AIDS* 2002, **16**(2):251-258.
- [77] van Griensven GJ, Limanonda B, Ngaokeow S, Ayuthaya SI, Poshyachinda V: **Evaluation of a targeted HIV prevention programme among female commercial sex workers in the south of Thailand.** *Sex Transm Infect* 1998, **74**(1):54-58.
- [78] Dickson-Gomez J, Weeks M, Martinez M, Convey M: **Times and places: Process evaluation of a peer-led HIV prevention intervention.** *Subst Use Misuse* 2006, **41**(5):669-690.
- [79] Latkin CA: **Outreach in natural settings: the use of peer leaders for HIV prevention among injecting drug users' networks.** *Public Health Rep* 1998, **113 Suppl 1**:151-159.
- [80] Broadhead RS, Heckathorn DD, Weakliem DL, Anthony DL, Madray H, Mills RJ, Hughes J: **Harnessing peer networks as an instrument for AIDS prevention: results from a peer-driven intervention.** *Public Health Rep* 1998, **113 Suppl 1**:4257.
- [81] Cottler LB, Compton WM, Ben Abdallah A, Cunningham-Williams R, Abram F, Fichtenbaum C, Dotson W: **Peer-delivered interventions reduce HIV risk behaviors among out-of-treatment drug abusers.** *Public Health Rep* 1998, **113 Suppl 1**:31-41.
- [82] Allen S, Tice J, Van de Perre P, Serufulira A, Hudes E, Nsengumuremyi F, Bogaerts J, Lindan C, Hulley S: **Effect of serotesting with counselling on condom use and seroconversion among HIV discordant couples in Africa.** *BMJ* 1992, **304**(6842):1605-1609.
- [83] Sherr L, Lopman B, Kakowa M, Dube S, Chawira G, Nyamukapa C, Oberzaucher N, Cremin I, Gregson S: **Voluntary counselling and testing: uptake, impact on sexual behaviour, and HIV incidence in a rural Zimbabwean cohort.** *AIDS* 2007, **21**(7):851-860.
- [84] Weinhardt LS, Carey MP, Johnson BT, Bickham NL: **Effects of HIV counseling and testing on sexual risk behavior: a meta-analytic review of published research, 1985-1997.** *Am J Public Health* 1999, **89**(9):1397-1405.
- [85] The Voluntary HIV-1 Counseling and Testing Efficacy Study Group: **Efficacy of voluntary HIV-1 counselling and testing in individuals and couples in Kenya, Tanzania, and Trinidad: a randomised trial.** *Lancet* 2000, **356**(9224):103-112.
- [86] Delva W, Mutunga L, Quaghebeur A, Temmerman M: **Quality and quantity of antenatal HIV counselling in a PMTCT programme in Mombasa, Kenya.** *AIDS Care* 2006, **18**(3):189-193. A
- [87] Corbett EL, Makamure B, Cheung YB, Dauya E, Matambo R, Bandason T, Munyati SS, Mason PR, Butterworth AE, Hayes RJ: **HIV incidence during a clusterrandomized trial of two strategies providing voluntary counselling and testing at the workplace, Zimbabwe.** *AIDS* 2007, **21**(4):483-489.
- [88] Grinstead OA, Gregorich SE, Choi KH, Coates T: **Positive and negative life events after counselling and testing: the Voluntary HIV-1 Counselling and Testing Efficacy Study.** *AIDS* 2001, **15**(8):1045-1052.

- [89] Yeatman SE: **Ethical and Public Health Considerations in HIV Counseling and Testing: Policy Implications.** *Stud Fam Plann* 2007, **38**(4):271-278.
- [90] Cates W: **A Funny Thing Happened on the Way to FHI.** *Sex Transm Dis* 2004, **31**(1):3-7.
- [91] Volmink J, Siegfried NL, van der Merwe L, Brocklehurst P: **Antiretrovirals for reducing the risk of mother-to-child transmission of HIV infection.** *Cochrane Database Syst Rev* 2007(1).
- [92] Read JS, Newell MK: **Efficacy and safety of cesarean delivery for prevention of mother-to-child transmission of HIV-1.** *Cochrane Database Syst Rev* 2005(4).
- [93] The International Perinatal HIVG: **The Mode of Delivery and the Risk of Vertical Transmission of Human Immunodeficiency Virus Type 1 -- A Meta-Analysis of 15 Prospective Cohort Studies.** *N Engl J Med* 1999, **340**(13):977-987.
- [94] The European Mode of Delivery Collaboration: **Elective caesarean-section versus vaginal delivery in prevention of vertical HIV-1 transmission: a randomised clinical trial. The European Mode of Delivery Collaboration.** *Lancet* 1999, **353**(9158):1035-1039.
- [95] Coutsoodis A, Pillay K, Kuhn L, Spooner E, Tsai WY, Coovadia HM: **Method of feeding and transmission of HIV-1 from mothers to children by 15 months of age: prospective cohort study from Durban, South Africa.** *AIDS* 2001, **15**(3):379387.
- [96] Coovadia HM, Bland RM: **Preserving breastfeeding practice through the HIV pandemic.** *Trop Med Int Health* 2007, **12**(9):1116-1133.
- [97] Coovadia HM, Rollins NC, Bland RM, Little K, Coutsoodis A, Bennish ML, Newell M-L: **Mother-to-child transmission of HIV-1 infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study.** *Lancet* 2007, **369**(9567):1107.
- [98] WHO: **Consensus statement.** In *WHO HIV and Infant Feeding Technical Consultation Held on behalf of the Inter-agency Task Team (IATT) on Prevention of HIV Infections in pregnant Women, Mothers and their Infants.* Geneva; 2006.
- [99] Katz MH, Schwarcz SK, Kellogg TA, Klausner JD, Dilley JW, Gibson S, McFarland W: **Impact of highly active antiretroviral treatment on HIV seroincidence among men who have sex with men: San Francisco.** *Am J Public Health* 2002, **92**(3):388394.
- [100] Gremy I, Beltzer N: **HIV risk and condom use in the adult heterosexual population in France between 1992 and 2001: return to the starting point?** *AIDS* 2004, **18**(5):805-809.
- [101] Scheer S, Chu PL, Klausner JD, Katz MH, Schwarcz SK: **Effect of highly active antiretroviral therapy on diagnoses of sexually transmitted diseases in people with AIDS.** *Lancet* 2001, **357**(9254):432-435.
- [102] Osmond DH, Pollack LM, Paul JP, Catania JA: **Changes in prevalence of HIV infection and sexual risk behavior in men who have sex with men in San Francisco: 1997 2002.** *Am J Public Health* 2007, **97**(9):1677-1683.
- [103] Crepaz N, Hart TA, Marks G: **Highly active antiretroviral therapy and sexual risk behavior: a meta-analytic review.** *JAMA* 2004, **292**(2):224-236.
- [104] Kennedy C, O'Reilly K, Medley A, Sweat M: **The impact of HIV treatment on risk behaviour in developing countries: a systematic review.** *AIDS Care* 2007, **19**(6):707-720.

- [105] Baggaley RF, Ferguson NM, Garnett GP: **The epidemiological impact of antiretroviral use predicted by mathematical models: a review.** *Emerg Themes Epidemiol* 2005, **2**:9.
- [106] WHO: **Zambia: Summary Country Profile for HIV/AIDS Treatment Scale-Up.** 2005.
- [107] Melbye M, Njelesani EK, Bayley A, Mukelabai K, Manuwele JK, Bowa FJ, Clayden SA, Levin A, Blattner WA, Weiss RA, et al.: **Evidence for heterosexual transmission and clinical manifestations of human immunodeficiency virus infection and related conditions in Lusaka, Zambia.** *Lancet* 1986, **2**(8516):1113-1115.
- [108] Simooya O, Phiri A, Sanjobo N, Sichilima W: **Sexual behaviour and issues of HIV/AIDS prevention in an African prison.** *AIDS* 1995, **9**(12):1388-1389.
- [109] Dzekedzeke K, Fylkesnes K: **Estimating adult mortality in the face of high HIV prevalence in Zambia.** Submitted.
- [110] Fylkesnes K, Brunborg H, Msiska R: **Zambia: The current HIV/AIDS situation - and future demographic impact.** 1994.
- [111] Fylkesnes K, Ndhlovu Z, Kasumba K, Musonda RM, Sichone M: **Studying dynamics of the HIV epidemic: population-based data compared with sentinel surveillance in Zambia.** *AIDS* 1998, **12**(10):1227-1234.
- [112] Michelo C, Sandøy IF, Dzekedzeke K, Siziya S, Fylkesnes K: **Steep HIV prevalence declines among young people in selected Zambian communities: populationbased observations (1995-2003).** *BMC Public Health* 2006, **6**:279.
- [113] Dzekedzeke K, Fylkesnes KM: **Reducing uncertainties in global HIV prevalence estimates: the case of Zambia.** *BMC Public Health* 2006, **6**(1):83.
- [114] Fylkesnes K, Musonda RM, Kasumba K, Ndhlovu Z, Mluanda F, Kaetano L, Chipaila CC: **The HIV epidemic in Zambia: socio-demographic prevalence patterns and indications of trends among childbearing women.** *AIDS* 1997, **11**(3):339-345.
- [115] Hargreaves JR, Glynn JR: **Educational attainment and HIV-1 infection in developing countries: a systematic review.** *Trop Med Int Health* 2002, **7**(6):489-498.
- [116] Michelo C, Sandøy IF, Fylkesnes K: **Marked HIV prevalence declines in higher educated young people: evidence from population-based surveys (1995-2003) in Zambia.** *AIDS* 2006, **20**(7):1031-1038.
- [117] National HIV/AIDS/STD/TB Council: **Strategic Framework 2001-2003.** 2000.
- [118] Nanda P: **The Impact of Health Sector Reforms on Reproductive Health Goals and Objectives in Zambia.** In *The Implications of Health Sector Reform on Reproductive Health and Rights.* Washington D. C.: Center for Health and Gender Equity, The Population Council,; 1998.
- [119] Garrett L: **Prosperity's Fatal Side Effect: New urban lifestyle spurs virus.** In *Newsday*; 1988.
- [120] **Does Zambia need a national AIDS council, Uganda-style or is that 'tunnel vision'?** *AIDS Anal Afr* 1992(September-October).
- [121] National HIV/AIDS/STI/TB Council: **The Secreteriate.** National HIV/AIDS/STI/TB Council; 2007.
- [122] Yoder PS, Hornik R, Chirwa BC: **Evaluating the program effects of a radio drama about AIDS in Zambia.** *Stud Fam Plann* 1996, **27**(4):188-203.

- [123] Underwood C, Hachonda H, Serlemitos E, Bharath-Kumar U: **Reducing the risk of HIV transmission among adolescents in Zambia: psychosocial and behavioral correlates of viewing a risk-reduction media campaign.** *J Adolesc Health* 2006, **38**(1):55.
- [124] Mitchell V, Chilangwa C, Kapapa F, Long L: **Qualitative assessment/documentation. Corridors of Hope project Zambia 2006.** USAID, FHI, JICA. 2006.
- [125] Kamwanga J, Simbaya J, Luhana C: **Corridors of Hope project. Final evaluation report.** JICA, USAID. 2006.
- [126] Ministry of Finance and National Planning: **Zambia: First PRSP Implementation Progress Report. January 2002 – June 2003.** 2004.
- [127] WHO, UNAIDS, UNICEF: **Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector, Progress Report.** 2007.
- [128] United Nations Development Programme: **Zambia Human Development Report 2003. Eradication of Extreme Poverty and Hunger in Zambia: An Agenda for Enhancing the Achievement of the Millennium Development Goals.** Lusaka: United Nations Development Programme. 2003.
- [129] Garbus L: **HIV/AIDS in Zambia.** AIDS Policy Research Center, University of California San Francisco. 2003.
- [130] Central Statistical Office [Zambia]: **2000 Census of Population and Housing. Lusaka Province Analytical Report. Volume Five.** Lusaka: 2004.
- [131] UNAIDS: **Country Situation Analysis Zambia.** UNAIDS; 2007.
- [132] Dzekedzeke K, Fylkesnes K: **Pitfalls of indirect estimates of life expectancy in a society in which HIV prevalence levels are high.** *Submitted.*
- [133] Central Statistical Office (Zambia): **2004 Living conditions Monitoring report.** Lusaka: Central Statistical Office. 2004.
- [134] Ministry of Health, Central Board of Health, Government of Republic of Zambia: **Zambia Antenatal Clinic Sentinel Surveillance Report, 1994-2004.** Lusaka: 2005.
- [135] University of Zambia, Central Statistical Office (Zambia), Macro International Inc (USA): **Zambia Demographic and Health Survey 1992.** Lusaka and Columbia: 1993.
- [136] Central Board of Health [Zambia], Ministry of Health [Zambia], Macro International Inc [USA]: **Zambia Demographic and Health Survey 1996.** Lusaka and Calverton: Central Board of Health [Zambia], Ministry of Health [Zambia], Macro International Inc [USA],. 1997.
- [137] Central Statistical Office [Zambia], Central Board of Health [Zambia], ORC Macro: **Zambia Demographic and Health Survey 2001-2002.** Lusaka and Maryland: Central Statistical Office [Zambia], Central Board of Health [Zambia], ORC Macro, 2003.
- [138] Central Board of Health [Zambia], National HIV/AIDS Council [Zambia], Tropical Disease Research Centre [Zambia], Swedish International Development Co-operation Agency, Centers for Disease Control and Prevention [USA]: **ANC Sentinel Surveillance of HIV/ Syphilis Trends in Zambia 1994-2002.** 2002.
- [139] Fylkesnes K, Kasumba K: **The first Zambian population-based HIV survey: saliva-based testing is accurate and acceptable.** *AIDS* 1998, **12**(5):540-541.

- [140] Fylkesnes K, Siziya S: **A randomized trial on acceptability of voluntary HIV counselling and testing.** *Trop Med Int Health* 2004, **9**(5):566-572.
- [141] Central Statistical Office [Zambia], Central Board of Health [Zambia], MEASURE Evaluation: **Zambia Sexual Behaviour Survey 2003.** Lusaka, Zambia, and North Carolina, USA: Central Statistical Office [Zambia], Central Board of Health [Zambia], MEASURE Evaluation,. 2004.
- [142] Central Statistical Office [Zambia], Ministry of Health [Zambia], Measure Evaluation: **Zambia Sexual Behaviour Survey 2000.** Lusaka, Zambia, and North Carolina, USA: Central Statistical Office [Zambia], Ministry of Health [Zambia], Measure Evaluation,. 2002.
- [143] Central Statistical Office [Zambia], Ministry of Health [Zambia], Project Concern International [Zambia], Measure Evaluation: **Zambia Sexual Behaviour Survey 1998.** North Carolina, USA: Chapel Hill: Central Statistical Office [Zambia], Ministry of Health [Zambia], Project Concern International [Zambia], Measure Evaluation,. 1999.
- [144] Working Group on Global HIV/AIDS and STI Surveillance, UNAIDS/WHO: **Guidelines for Conducting HIV Sentinel Serosurveys among Pregnant Women and Other Groups.** UNAIDS, CDC, WHO. 2003.
- [145] Constantine NT, Sill AM, Jack N, Kreisel K, Edwards J, Cafarella T, Smith H, Bartholomew C, Cleghorn FR, Blattner WA: **Improved classification of recent HIV1 infection by employing a two-stage sensitive/less-sensitive test strategy.** *J Acquir Immune Defic Syndr* 2003, **32**(1):94-103.
- [146] McDougal JS, Pilcher CD, Parekh BS, Gershy-Damet G, Branson BM, Marsh K, Wiktor SZ: **Surveillance for HIV-1 incidence using tests for recent infection in resource-constrained countries.** *AIDS* 2005, **19** Supplement 2:S25-S30.
- [147] Grulich AE, Kaldor JM: **Evidence of success in HIV prevention in Africa.** *Lancet* 2002, **360**(9326):3-4.
- [148] Hallett TB, Gregson S, Lewis JC, Lopman BA, Garnett GP: **Behaviour change in generalised HIV epidemics: impact of reducing cross-generational sex and delaying age at sexual debut.** *Sex Transm Infect* 2007, **83** Suppl 1:54.
- [149] Morris M, Kretzschmar M: **Concurrent partnerships and the spread of HIV.** *AIDS* 1997, **11**(5):641-648.
- [150] Watts CH, May RM: **The influence of concurrent partnerships on the dynamics of HIV/AIDS.** *Math Biosci* 1992, **108**(1):89-104.
- [151] Drumright LN, Gorbach PM, Holmes KK: **Do people really know their sex partners? Concurrency, knowledge of partner behavior, and sexually transmitted infections within partnerships.** *Sex Transm Dis* 2004, **31**(7):437-442.
- [152] Gorbach PM, Drumright LN, Holmes KK: **Discord, discordance, and concurrency: comparing individual and partnership-level analyses of new partnerships of young adults at risk of sexually transmitted infections.** *Sex Transm Dis* 2005, **32**(1):7-12.
- [153] Potterat JJ, Zimmerman-Rogers H, Muth SQ, Rothenberg RB, Green DL, Taylor JE, Bonney MS, White HA: **Chlamydia transmission: concurrency, reproduction number, and the epidemic trajectory.** *Am J Epidemiol* 1999, **150**(12):1331-1339.
- [154] Koumans EH, Farley TA, Gibson JJ, Langley C, Ross MW, McFarlane M, Braxton J, St Louis ME: **Characteristics of persons with syphilis in areas of persisting syphilis in the United States:**

- sustained transmission associated with concurrent partnerships. *Sex Transm Dis* 2001, **28**(9):497-503.
- [155] Dare OO, Cleland JG: **Reliability and validity of survey data on sexual behaviour.** *Health Transit Rev* 1994, **4 Suppl**:93-110.
- [156] WHO, UNAIDS: **Reconciling antenatal clinic-based surveillance and populationbased survey estimates of HIV prevalence in Sub-Saharan Africa.** WHO, UNAIDS. 2003.
- [157] Buckner B, Singh K, Tate J: **Zambia Sexual Behaviour Survey 2005.** Lusaka and Maryland: Central Statistical Office, Ministry of Health, MEASURE Evaluation. 2006.
- [158] HIV Sentinel Surveillance Team: **Time trends in the HIV epidemic in the 1990s. 1999 Report.** Ministry of Health, Central Board of Health. 1999.
- [159] Catania JA, Gibson DR, Chitwood DD, Coates TJ: **Methodological problems in AIDS behavioral research: influences on measurement error and participation bias in studies of sexual behavior.** *Psychol Bull* 1990, **108**(3):339-362.
- [160] Copas AJ, Johnson AM, Wadsworth J: **Assessing participation bias in a sexual behaviour survey: implications for measuring HIV risk.** *AIDS* 1997, **11**(6):783790.
- [161] Tate J, Singh K, Ndubani P, Kamanga J, Buckner B: **Measurement of HIV Prevention Indicators: A Comparison of the PLACE Method and a Household Survey in Zambia.** Measure Evaluation, USAID. 2007.
- [162] Morris M: **Telling tails explain the discrepancy in sexual partner reports.** *Nature* 1993, **365**(6445):437-440.
- [163] Weir SS, Pailman C, Mahlalela X, Coetzee N, Meidany F, Boerma JT: **From people to places: focusing AIDS prevention efforts where it matters most.** *AIDS* 2003, **17**(6):895-903.
- [164] Rothman KJ, Greenland S: *Modern Epidemiology.* 2nd edition: Lippincott Williams & Wilkins; 1998.
- [165] Nelson SJ, Manhart LE, Gorbach P, Martin DH, Stoner BP, Aral SO, Holmes KK: **Measuring Sex Partner Concurrency: It's What's Missing That Counts.** *Sex Transm Dis* 2007, **34**(10):801-807.
- [166] Adimora AA, Schoenbach VJ, Martinson F, Donaldson KH, Stancil TR, Fullilove RE: **Concurrent sexual partnerships among African Americans in the rural south.** *Ann Epidemiol* 2004, **14**(3):155-160.
- [167] Manhart LE, Aral SO, Holmes KK, Foxman B: **Sex partner concurrency: measurement, prevalence, and correlates among urban 18-39-year-olds.** *Sex Transm Dis* 2002, **29**(3):133-143.
- [168] Buve A, Lagarde E, Carael M, Rutenberg N, Ferry B, Glynn JR, Laourou M, Akam E, Chege J, Sukwa T: **Interpreting sexual behaviour data: validity issues in the multicentre study on factors determining the differential spread of HIV in four African cities.** *AIDS* 2001, **15 Suppl 4**:S117-126.
- [169] Glynn JR, Carael M, Auvert B, Kahindo M, Chege J, Musonda R, Kaona F, Buve A: **Why do young women have a much higher prevalence of HIV than young men? A study in Kisumu, Kenya and Ndola, Zambia.** *AIDS* 2001, **15 Suppl 4**:S51-60.
- [170] Siegel DM, Aten MJ, Roghmann KJ: **Self-reported honesty among middle and high school students responding to a sexual behavior questionnaire.** *J Adolesc Health* 1998, **23**(1):20-28.

Appendix one

Part A: DEMOGRAPHIC DATA

1. Gender

Male-----

Female-----

2. Age (indicate) -----

3. Category -----

In school-----

Out of school-----\

B. RESPONDENTS UNDERSTANDING ON HIV/AIDS

4. Have you heard about HIV/ AIDS?

Yes -----

No.....

If yes where did you get the information?

.....

5. Do you know what HIV/AIDS stand for ?

Yes-----

No.....

If yes

6. What does HIV stand for.....

7. What does AIDS stand for.....

8. How is HIV/AIDS transmitted.....

9. How can you find out if you have AIDS.....

10. Is HIV/AIDS preventable.....Yes.....No.....

If yes, how?

.....
.....
.....

If No, Why?

.....
.....
.....

11. Are there ways of prolonging lives of people with HIV/AIDS...Yes.....No...

If Yes, how.....

C. LIMITED ACCESS TO HEALTH CARE

12. Have you attended a health facility in the last six months? Yes..... No.....

If yes what took you to the health facility

.....
.....
.....

13. Do the youths in this area see medical attention Yes.....No.....

If yes, where

.....
.....
.....

If no what are the reasons for them not to seek medical services?

.....
.....
.....

D. CULTURAL AND SOCIAL –ECONOMIC FACTORS

14. In your own opinion do cultural practices contribute to the spread of HIV/AIDS among the youths in this area? YesNO.....

If yes , outline those cultural practices which contribute to the spread of HIV/ AIDS

.....
.....
.....

15. Does Culture prevent people to freely contribute on HIV/ AIDS? YesNo.....

If yes how

.....
.....
.....

16. Does lack of social economic resources (income , education etc.) among the youths increase the chance of contracting HIV/ AIDS? Yes.....No.....

If Yes, why

.....
.....
.....

E. SEXUAL, HEALTH, ATTITUDES AND BEHAVIOUR

17. Does having multiple sexual partners among youths increase chances of contracting HIV/AIDS? Yes No.....

If yes, how does having multiple sexual partners increase the chances of contracting HIV

.....
.....
.....

19 is it important / helpful for a youth who is HIV positive to declare his or her status

YesNo.....

If yes, why is it important to declare HIV positive status?

.....
.....
.....

20 How should youths who are HIV / AIDS infected be treated?-----

